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(See page 6)

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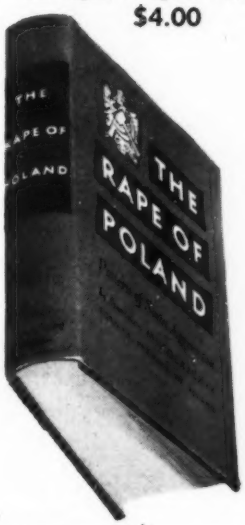

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by Colonel S. L. A. Marshall

THE ARMORED FUTURE

One of the foremost military writers of the day gives us his conception of the place of armor in future global strategy: an article demanding thoughtful attention at a time when much discussion centers on a Western Union.

IN an old vaudeville skit a man said to his companions: "There are five reasons why I can't play poker tonight. I haven't any money—."

They said: "Never mind the other four."

It is like that with this topic.

In 1928, Col. J. F. C. Fuller wrote four arguments why the future of the battlefield belonged to armor. His words: "It will shorten the length of battles, reduce the size of armies, make wars less frequent and reduce cost, casualties and destruction."

This was false prophecy by an otherwise true prophet, since in the event armor did none of these things.

The war was longer and costlier and the size of armies was greater than had ever been before, this being the inherent nature of wars which are fought with long-ranging weapons, and therefore threaten the safety of all people.

But my point is that Colonel Fuller might better have skipped the academic argument and gone to the fundamental: *It would happen because it was inevitable.* As he said further along: "If we must contend, it is better to fight behind armor than in woolen jackets." That stated the whole case in the fewest words.

Today there is no better reason for contending that in the future, armor's control over the field of battle will be more rather than less, compared with all that has happened.

If we can agree that the battlefield has not been eliminated, and that wars will still be won by forward movement, then decision will still devolve upon armor, and it is vain to believe that the thinking of millions of men in this industrial age can be conditioned to any sterner requirement.

Armor should be able to make an airtight case simply by leafing through the pages of the last great effort. For the war closed with its power relatively greater than ever before, still ascendant and still in the process of development. Armored success had become such an old story by 1945 that we now tend to overlook that the campaigns of the last year were undoubtedly the most brilliant of all.

But it would serve no real end to cite the record. The ear of the public is taken by the captious criticism that it is the chronic fault in military forces that they begin every new war where the last one left off. They are heedless of the warning that lessons soundly drawn from past experience are the only secure gateway to the future.

It is for this reason that it would seem more profitable to by-pass those matters which bear upon armor's place in the future tactical equation and limit the discussion to the influence of armor on the further development of a national strategy.

Once we properly evaluate the part of weapons in the shaping of national policy and in the staging of a military preparation proportionate to it, we will be moving toward a balanced future. We will be better prepared to estimate the role of any and all weapons in whatever operations may come.

This approach is not new, nor will it seem radical to those who are accustomed to weigh the problems of war according to the enduring principles. Nonetheless, it could be called old-fashioned. The German general who said: "Strategy is so much spiced garbage," might well have been the prophet of today's great majority. Always assuming that the telling weight will be on our side, it becomes such an alluring possibility that a next war might be decided in one thunderclap of action that there is no general disposition to face the question: "If your immediate tactics fail to end it, is your strategy such that you are certain to prevail?"

Once before we made a major strategic miscalculation by failing to comprehend the influence of armor upon the over-all nature of war. It is an inviolable principle in strategy, confirmed by history, though not yet sanctioned by our military teaching, that a new weapon, once introduced, will be developed to its limit, and will be exploited operationally as far as the bounds of man's imagination may carry it. The horizons of war expand ever according to this principle and to cherish the illusion that it may ever be made subject to human control is simply to put one's own strategy in shackles. Thus from 1919 onwards, while we continued to talk the language of limited war, the one ponderable reality was that the birth of armored power, abetted by the development of the air arm, was setting the world stage irremediably for total war, and that though we refused to see this reality, others would compel us to acknowledge it in time.

Today there is danger that we may make an error

equally grave, and in the attempt to leap too far may stumble at the take-off.

The nations of the world have not outlawed armored power. They will probably not do so, and if they were to attempt it, they couldn't make it stick, short of a total change in the temper of life on this planet whereby it could become possible for the first time for the lion and the lamb to lie down together in contented sleep.

The world situation is therefore one in which if another great war comes, *one side will certainly attempt to employ armor in preponderant strength.*

So considering it, there are three main questions which require full study and final answer if the place of armor in the making of our national strategy is to be correctly assessed.

1. *Without armored force can there be security for any national frontiers?*

2. *Without security of frontiers can there be any prospect of viable and mutually helpful military alliances between states?*

3. *Without effective allies can the United States be sure of winning a third inter-continental war?*

If an affirmative answer can be returned right down the line on these questions, then armor has seen its greatest days and henceforth it will contribute to the national security on a diminishing scale.

But if we can't say yes to these questions—and I, for one, don't believe we can—there would seem room for agreement that armor is of the vital stuff by which we can build a new foundation for western security.

This entails not only stimulating the rebuilding of Western Europe's armored forces but broadening the base under our own, since the same considerations which justify the one step necessitate the other. If it is a preponderant armor which is needed, then we can not start with any theories that it will become possible to extract the greater from the lesser. The problem is mutual and so must be the solution. Military alliances, if they are to stand the test of war, must be based upon reciprocal military advantages. This is not possible except as both parties acquire additional security by virtue of the compact. And I would say firmly that without strength in armor, no state has the basis of security or defensive frontiers worthy of the name.

In our two world wars, the United States was a victor chiefly because we could contribute the determining portion to a side already strongly weighted. No student of either war has yet been rash enough to suggest that, if at any stage our main allies had quit, our arms still would have been strong enough to win handily.

In fact, during World War II, the mere suggestion that one of our major allies might take a run-out powder was enough to make tremors run through every office in Washington.

By this time, therefore, we should have learned something of the nature, scope and stress of great-power conflict, and if we have done so, then it is reasonable to believe that we could reach common agreement on one fundamental proposition.

If there is no absolute surety that war can be waged with the new weapons in such way that it can be ended before there is full mobilization and deployment of field armies into Western Europe, then we must accept it as probable that the war will take an ultimate form which will again force us to extend to our extreme limit.

To concede that much, and then wittingly to continue on a course which would risk the danger without cultivating effective future alliances for our side, based upon a common-sense appreciation of what it takes to win battles, would be a fool's way out. In fact, it would be an error in grand strategy as reckless of consequence as would be our politics if, at the present pass, we jettisoned all of our atom bombs in the Tuscarora Deep.

It is at this point that we may imagine a voice from the gallery objecting as follows: "Granting all that you say, why is armor the decisive element? Is it not true that each of the other main combat arms is just as essential for balanced defense?"

True, but still not the whole truth. It is like the building of a brick wall. You may have the bricks, but you don't possess a wall until you have supplied the mortar. It is from lack of armor that Western Europe's security forces are as devitalized today as a rickety

Colonel S. L. A. Marshall enlisted in the Army in June of 1917. He was commissioned in Infantry and served two years overseas, participating in the Soissons, St. Mihiel, Meuse-Argonne and Ypres-Lys Campaigns.

With World War I behind him Colonel Marshall entered upon the journalistic career that developed the military analyst of today. A five-year groundwork as Reporter and City Editor with the El Paso *Herald* terminated in 1927 with his transfer to *The Detroit News* as Military Critic and Editorial Writer, a post he holds today.

Re-entering the service in 1942 as a major, Colonel Marshall was assigned as Chief of Orientation for the Army of the United States where, in addition to other duties he established the Army News Service, wrote the basic national policy on Americans of Japanese blood, and developed the Army policy of indoctrination of enemy prisoners of war.

In August of 1943 Colonel Marshall joined the newly forming Historical Division and began an important tour which took him first to the Pacific and later to the European Theater, where he was Theater Historian at war's end, having established methods of research which became standing procedure in all theaters.

Books from the Marshall pen include *Blitzkrieg, Armies on Wheels, Island Victory, Bastogne: (The First Eight Days), Makin, Men Against Fire* and *Toward Greater Mobility.*

As a correspondent Colonel Marshall covered the Spanish Civil War in 1936-37, and attended four revolutions in Mexico, Nicaragua and Cuba. As a student of military history he became interested in the writings of J. F. C. Fuller, convinced that his doctrine of war was sound. Most of his armor thinking has its genesis in Fuller's theories, modified by separate observations and reflections.

The Armored Cavalry Journal is pleased to present *The Armored Future.*

child. There is no dearth of infantry potential. As for air power, it is one thing to demonstrate that we can take the Atlantic Ocean in a stride, but it is quite another to establish the requisite conditions enabling air to base on the Continent in support of an active defense. Air power can not stick its head in the noose of insecure ground approaches. Denied the help of armor, it is either strangled or it becomes largely neutralized by distance.

Armor is the base of national defense today for one prime reason: In the moral sense it is the warp and woof of the base in tactics. Perhaps few infantrymen or artillerymen would be willing to express it that forcefully because we all like the big role and are reluctant to yield whatever favor tradition had handed us on a platter.

But the long-accepted view of the defensive base as an area where the infantry line deploys upon the guns is sustainable now only in the small 10-cent store wars. The defensive base today is where tanks are, and where by their weight they insure integrity to the general position. No factor of change is likely to alter this relationship in the foreseeable future. Bigger bombs dropped from faster planes can have only the effect of confirming it. While there is enemy armor to threaten the infantry line and the emplaced artillery which supports it, there is no defensive stability to the base except as it is provided by a supporting armor.

It is in this particular that the role of armor within the combined arms differs so radically from the role of cavalry, prior to the time when the rifle bullet ended its reign as a shock force and turned it more exclusively toward the reconnaissance function. The time never was when cavalry formed the rock of defense. Just as truly, the time perhaps will never come when tankers will see themselves in this light. Handling a mechanism which is by nature preponderantly offensive, thinking instinctively in terms of the attack and deprecating their own tactical powers on defense where compared with the other arms, they are not fully sensible of the fact that in grand strategy it is the defensive value of armored force which weights the scale.

I doubt that this matters, so long as soldiers are supplied with more and better armor and keep working toward more efficient methods of fighting it.

What does matter is that the case be not misunderstood, or discounted, up yonder in the stratosphere of policy making. In attempting to hitch our strategic wagon to a new star, we must not make the fatal mistake of forgetting to lock the tail gate. If we are to face providently toward the future, it is important that we understand what armor alone can do for a union of freedom-seeking nations than it is to concern ourselves with what it will do for a line of infantrymen. To know the problem only halfway, as I wrote in 1940 when expressing similar thoughts on this same subject, is to miss it wholly.

Since then we have discovered that one of our direst national needs is a moral rearmament of our foot forces, an infusion of the team idea, and the rekindling of a real national spirit, lacking which the vital spark which is required of those individuals who are called to make the unequal sacrifice will never flame very high.

This is less true of what experience has taught us about armor. One of the more reassuring facts from World War II was that we had such a relatively high percentage of first-class armored divisions and that in those which were commanded with consummate boldness, the morale in all ranks was so remarkably high.

But quality without quantity will not win a major war, nor can it be expected to win a peace which is characterized chiefly by its unlimited risks.

The New M46-General Patton Tank

At a special Armistice Day ceremony at the Detroit Arsenal the Army unveiled its new tank, named in honor of a great Armored Cavalryman, General George S. Patton, Jr. General Patton's widow christened this new combat vehicle, officially designated as the M46. November 11th, in addition to being Armistice Day, is the day of General Patton's birth and was the day in 1942 on which he accepted the armistice offer of the French Forces in North Africa.

Though the new General Patton tank is superficially not greatly different from the present standard M26 medium tank, several improvements have given it greater speed, increased reliability and more maneuverability, according to test reports from Ordnance Department tank engineers.

A compact new air-cooled twelve-cylinder engine will give the General Patton tank 62 per cent more power than that delivered by the plant of the M26, but at the same time will not occupy so much space in the vehicle. The increased power—from 500 horsepower in the M26 to 810 in the M46—will increase the speed of the new tank 50 per cent over the old one, from 20 to 30 miles an hour.

A new gearing arrangement has eliminated the relatively complicated controls used in older-type tanks and has substituted a single "wobble-stick" control combining the functions of gear-shifting and steering. With this arrangement, Ordnance designers say, it is possible for the tank to go directly from high-speed forward to reverse without stopping and without the driver doing more than pulling back the "wobble-stick."

Improved traction through new design of tank treads is an important feature of the M46, according to reports of tests. A waterproofed electrical system permanently shields all circuits, and, with special intake and exhaust stacks added, the M46 tank is capable of fording streams so deep that the entire engine is submerged. With the hull winterized, the M46 will be able to operate in temperatures as low as 65 degrees below Fahrenheit zero.

A 90 millimeter gun firing high-velocity, armor-piercing shells will give the tank its principal wallop.

Major General Everett S. Hughes, Chief of Ordnance, and Major General Hobart R. Gay, General Patton's wartime Chief of Staff, spoke at the Detroit Arsenal ceremonies. (See cover.)

The Mobile Division of 1950-60

by Major Thomas J. Howard

Many of our readers will recall the article "Mobile Ground Troops of the Future" by Colonel Hamilton H. Howze, which appeared in the July-August 1947 issue of the *Journal*. With that as a basis, Major Thomas J. Howard, attending the recent Advanced Officers Course at The Armored School, developed an excellent monograph which has been adapted to *Journal* use and which we commend to your attention. It should be stated that the proposals offered are those of the author and do not in any way reflect official thought or indorsement.

Introduction

SHORTLY after the end of the war Infantry and Armored Conferences were held, attended by many who had served as commanders of combat echelons ranging in size from the company to the army. The results of these two conferences are embodied in the Tables of Organization of the new infantry and armored divisions. These are strong, well-balanced units, more than capable of accomplishing missions normally assigned to them.

It is reasonable to expect that they would be suitable for employment at any time within the next five or six years. They are equipped with the best equipment used in the last war, and reinforced to eliminate what appeared to be the weaknesses exposed during the past conflict. *But these divisions are designed better to fight the last war, and the enemy encountered then.*

A very noticeable trend appeared, one that might give us pause for reconsideration. This was the tendency to so equip *both* types of division that they could be used relatively independently of one another. The infantry division received its own tanks in sufficient strength to carry out limited exploitation missions in addition to strengthening its assault powers; the armored division was given sufficient infantry to carry out its own assaults and river crossings to a limited extent, in addition to strengthening its exploiting power.

Thus both divisions appear to have gained from this implementation. The only fly in the ointment, so to speak, is the complication of the supply problem for both, in many items doubling the tonnage requirements. This, considering the experience of the last war, is not an insoluble problem; we had between 85 and 90 divisions in combat and supplied them all with astonishingly few shortages.

But what if we have to produce 200 or more (including Allied) divisions at some future date? Can we provide the infinite variety of equipment necessary in the outfitting and sustenance of these units as we now have them planned?

Mobility, fire power and shock action are still required characteristics of a mobile division, whether it go under the name "Cavalry" or "Armor." *The missions of exploitation, counterattack and pursuit are the primary missions of these divisions, whether they use tanks, elephants, horses or flying discs to accomplish them.*

In an article entitled "Mobile Ground Troops of the Future," which appeared in the July-August 1947 issue of the Armored Cavalry Journal, Colonel Hamilton Howze presented a concrete organization which will better provide these characteristics. This organization, with its complementary required characteristics of equipment, must necessarily be limited by a time factor. I have made my proposal along this line, within the limitations of the coming decade.

SECTION 1: VEHICLES

General. In the present armored division we have four types of tanks, each presumably designed to do a different job. We have seven different weights of trucks, although the 2½-ton truck in its many different body styles predominates. There are still six motorcycles in the Tables of Equipment. This division requires *1220 gallons of gasoline to move one mile.*[1]

Undoubtedly we could provide the gasoline to sustain a large number of these divisions in action over a considerable period of time. Gasoline, however, is a bulky item and requires special handling. If it were possible to cut this consumption nearly in half, and yet have the same or greater mobility and fighting strength, would not that be preferable? There is no need to go into the problems of gasoline supply here, as they are familiar to all as one of the formidable logistical problems that always must be solved before we can undertake an offensive of any sort beyond our own shores. If we can reduce our requirements to a minimum, it will be possible to support just that many more divisions from the same source and capacity of supply.

---

[1]FM 101-10 (Draft), C&GSC, 1947, chap 5, p 14.

It should be mentioned that the scope of this article is to discuss only those units of the mobile division that are not components of other arms and services. No attempt will be made to discuss in detail medical detachments, the signal company, military police company, engineer battalion, division artillery, quartermaster or ordnance battalion. This applies equally to the vehicles. Considered in this section are only the vehicles used in the battalions of the main striking elements (reconnaissance, rifle and tank battalions).

Tanks

During World War II I had the privilege of serving with a cavalry group that had a good reputation for offensive action. During the early part of its operation the group was equipped with the light tank, M5. Nearly every tank that was lost would have been destroyed had it had the armor protection provided by the medium tank. We considered our tank platoons to be generally timid, as they were usually reluctant to engage in any action where enemy tanks could be expected.

Shortly after the first of 1945 the M5 was replaced by the M24 with its light 75mm gun. It is worthy of note that the M24 had *at most* one inch of armor plate, either on the hull or the turret. The M5 had up to one and one-half inches on the turret and one inch on the hull.[2]

The amazing change in the offensive capabilities of the tank companies was therefore the basis for the conclusion that what the men wanted was a gun, not more armor plate. Our percentage of losses with the M24 was lower, but no valid conclusions can be drawn therefrom, as German resistance was very spotty after we received those tanks. However, the aggressive attitude of the tankers materially speeded most small unit actions, and I am certain that had we been able to repeat the actions of 1944 with the M24 we would have been much more successful and less likely to hesitate in committing ourselves to actions involving enemy tanks or a similar threat.

Let us now set down the specific desired characteristics for our tank of 1950-60. All those set forth below have been discussed with people who should know, and are deemed feasible for production by 1950.

General

Weight—Not over 50,000 pounds (25 tons).
Height—Not over 80 inches.
Ground Clearance—At least 17 inches.
Ground Pressure—Not over 9 pounds per square inch.

Performance

Sustained Speed—At least 35 miles per hour.
Fuel Consumption—Not over .7 gallons per mile, preferably low grade fuel.
Grade—At least 60%, both ascending and descending.
Horsepower to Weight Ratio—At least 20 hp/ton.

Armament

Main—Capable of penetration of 10 inches of homogeneous armor plate at a range of 2000 yards at 30° obliquity (this implies use of specialized projectile and ammunition); also capable of delivering effective high explosive fire to maximum sight range; improved fire control and automatic loading.
Machine Guns—Two of possibly .50 caliber mounted coaxially; one in bow, fired remotely; one antiaircraft gun on outside of turret.
Vehicle Defense—Capable of masking the vehicle or keeping enemy personnel beyond destructive distance (white phosphorus?).

Communications

Non-command Tanks—Two or three preset frequency FM equipment of standard now embodied in the AN/VRC 5-8 series.
Command Tanks—At least ten preset frequency equipment of same standard.
(Interphone to be available on both tanks.)

Armor—Capable of protection from small arms and indirect artillery fire except direct hits; such additional as will not interfere with other desired characteristics. All designed with best possible slope.

We will now christen this vehicle the *MX1*.

Personnel Carriers

The half-track has long been considered unsatisfactory as a personnel carrier for several reasons, the most important of which are lack of cross-country mobility

[2] "Development of Armored Vehicles" The Armored School, pp 123 and 147.

ABOUT THE AUTHOR

Major Thomas J. Howard was integrated into the Army in 1946 after entering upon active duty from Reserve status at the start of the war. His early assignments included the 4th and 16th Cavalry Regiments. In 1943 he attended the Command and General Staff College. Combat assignments were with the 505th Parachute Infantry and the 106th Cavalry Group. Following a tour as Chief of the Communications Department at the Cavalry School, Major Howard attended the Advanced Officer's Course at The Armored School. He is now ROTC Instructor at Norwich University, Northfield, Vermont.

and lack of overhead cover. At the same time, the full track carrier has suffered in reputation from a seemingly too expensive method of transportation of personnel, in weight and gas consumption factors.

Our standards for a personnel carrier should include the following factors: mobility equal to that of the tank; protection from small arms and artillery fire, including overhead cover; economy in fuel consumption; interchangeability of parts with the basic tank being used (in this case the MX1); appreciable reduction of inside noise; communication facilities that tie into unit to which the vehicle is assigned and including components that can be easily demounted and carried by the dismounted squad; provision for easy conversion into convenient command post vehicles.

The characteristics have been given as generalities, as it is felt that the development of the personnel carrier must go hand in hand with that of the basic tank. It follows, then, that whenever work is going forward on the basic tank, the personnel carrier must be undergoing similar development, in all cases a companion of the tank. Let us call this generalization the *MX2*.

Tank Recovery Vehicles

Again we have a vehicle which must follow the development of the basic tank. Its capabilities are contained in its name, and in addition it must have communication and defensive weapons. It must fall within the general weight limitation of 25 tons, as must all vehicles in the division. We will call this the *MX3*.

Trucks

There are requirements within the battalions for four types of trucks, including ambulances. The presently available wheeled vehicles would satisfy our requirements if it were not for the fact that new power train developments give great promise in simplification and reduction of fuel consumption. Our Field Forces boards are exploring all possibilities, and undoubtedly will present us with much improved vehicles within the next few years. Those trucks considered in this category in addition to the ambulance are the ¼-ton truck, 2½-ton truck and the heavy wrecker, M1A1. For the purposes of further comparison and data the present fuel consumption and load capacities of these vehicles should be used.

SECTION 2: PLATOONS

General. In organizing this material, it has been difficult to find an easy approach to the proper discussion of the organization and at the same time show good reason for each innovation. Therefore, to better illustrate the standardization that exists in the mobile division, it was decided to discuss it on the various command levels, putting the basic organizations together to form the units and organizations of the division. Subsequent sections will be devoted to the successive command levels. Not considered in this section are those platoons not basic, but normally contained in the headquarters of companies and battalions.

It is intended to arrive at a striking element of *six tank battalions, one rifle battalion and a reconnaissance battalion, to replace the four tank battalions, four armored infantry battalions and one reconnaissance battalion* as found in the *present* armored division. These new battalions will use commonly the same tank, rifle and reconnaissance platoons and companies throughout. A comparison of these elements appears in Section 6.

FIGURE 1 THE TANK PLATOON

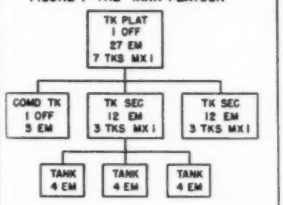


FIGURE 2 THE RIFLE PLATOON

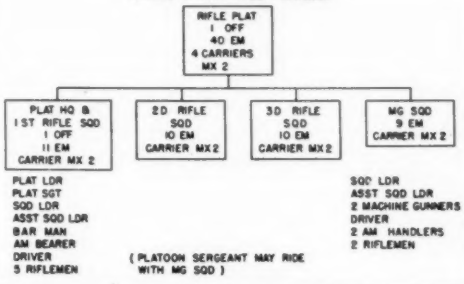
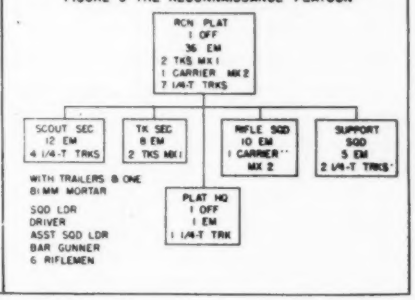


FIGURE 3 THE RECONNAISSANCE PLATOON



The Tank Platoon

(See Figure 1)

There are two innovations here: the larger number of tanks in the platoon, and the section of three tanks. There is very little reason why this could not be divided into three sections of two tanks each, but it looks a little easier from the control point of view to divide it in two, using the same tactics as with two sections of two tanks each.

A third "innovation" is the return to the four-man crew. It is realized that a five-man crew handles the work with much more ease, and that when one man out of each of several crews is absent the tanks are still operative. Again it is a matter of choice, but with the development of control within the vehicle to the point where it can be handled by three men, it is a preferred solution.

A further justification of the seven-tank platoon to be offered in passing is the experience of many of us that very seldom during combat are platoons complete. There are usually shortages within every company that are filled for only a short time before losses occur again. Seven tanks offer the platoon leader the opportunity

of employing fire and maneuver when he has lost over half his strength.

The Rifle Platoon
(See Figure 2)

The rifle platoon presented here differs little from the rifle platoon of the armored infantry battalion as it is now in the armored division. There are three less riflemen in the machine gun squad, and necessarily the communication arrangement is different.

It is contemplated that in addition to the normal vehicular communication tied into whatever unit this platoon may be assigned, a dismounted set which will communicate with the "B" set of the interim AN/VRC 5-8 will be carried from two of the personnel carriers. These sets have reached the development stage where reduction of weight is the primary consideration. These sets will relay through the vehicular sets when necessary, so that dismounted and mounted units may be netted together with little trouble. There is also being developed a fine small set to replace the SCR 536.

The employment of the rifle platoon in mobile units differs a great deal from the employment of the rifle platoon of the infantry division. The two have entirely different missions, and must be trained accordingly. True, they both work with tanks, but there the similarity ends. The one supports the tanks, and the other is supported by the tanks.

A recognition of this fact is implicit in the methods of employment of the tank company of the infantry regiment as advocated by the Infantry School. Those tank companies should be trained and used as infantry units. It follows, then, that any rifle support in mobile units should by the same token be trained and used by commanders of the mobile units.

The Reconnaissance Platoon
(See Figure 3)

Here appears the first basic organization with its own base of fire, maneuvering element and sufficient rifle strength. Here first appear the training problems of combined mounted and dismounted units.

The reconnaissance platoon used here is almost identical with the one now used in the armored division. The only differences are in the tracklaying vehicular equipment and consequent reduction of one man per tank crew.

The attention of the reader is invited to the support squad and its 81mm mortar. This may be contrasted to the mortar platoon in the armored infantry company of the present division, where one officer and 24 enlisted men, three carriers and one ¼-ton truck are utilized to handle three 60mm mortars. Of course, it is intended that these mortars be hand-carried some distance when the battalion or company is employed in dismounted action. It is still implied by the organization of the support squad, however, that the dismounted part of the platoon will never be employed beyond any point of support where a ¼-ton truck could not take the mortar. More of this in the next section.

This platoon is organized to make it flexible and useful under rather independent conditions. It contains those elements considered necessary to fight for information, perform security missions, and on occasion fight limited defensive missions. It embodies all that is best in our present-day organizational doctrine, with none of the disadvantages of mixed command that result when habitual reinforcements must be given to small mechanized units to give them strength.

These basic units presented in this section in this brief form will provide the background of the subsequent sections. They will be used in several combinations as the successive levels of command are discussed. These combinations have been considered primarily from the point of view: "What is the mission?" The simplicity and versatility of the organization will become more apparent as the framework is built upon.

SECTION 3: COMPANIES

The Tank Company
(See Figure 4)

Here is the first major departure from present accepted doctrine—riflemen within the tank company. It is not without precedent; witness the reconnaissance platoon.

The objections voiced most frequently against the use of a rifle platoon within the tank company were the difficulty of training and the possible prejudice of the company commander in favoring his tank platoons in choice of personnel. Experience seems to answer these arguments with numerous examples, notably the infantry rifle company, where the mortar and machine gun platoons have been used successfully for years.

Certainly a more difficult, but not insurmountable, training problem is presented. But here on the company level the commander can make sure of the state of cooperative training, where before he could hope only for the best from whatever infantry unit attached. These men now will have an undivided allegiance to the tank unit, which before was nebulous at best. True, there is not sufficient rifle strength in this tank company for all missions assigned, but the nucleus for most routine missions is established. Perhaps it would be better to have a company of two tank platoons and two rifle platoons, and certainly that would serve better for the heavier assault missions. But here we must strike a *minimum* balance; therefore, it was felt that the one platoon was sufficient. The argument that a company commander would discriminate against the dismounted element in selection of personnel needs little rebuttal.

The tank strength of this company is one more than that of the present heavy tank company of four platoons. With the tank of the characteristics described in Section 1, this company will have more mobility than the medium company, as good defense against enemy armor as the heavy company, and much more inherent flexibility than either one. Certainly this company will be capable of limited independent missions, but its main role is that of part of a larger force.

For those missions where the present tank company is reinforced by a platoon of armored infantry, we have already provided the rifle strength. The necessity of reorganizing communications, supply and maintenance for the bulk of combat operations has been eliminated. It is not proposed to discuss here the details of operations, but one should understand the implication of this rifle strength in the simplification of organization for combat plus the certainty of availability of this strength.

The Rifle Company
(See Figure 5)

Here is an orthodox organization, with only one major difference between it and the rifle company of the armored infantry battalion—a substitution of 81mm for 60mm mortars. The 60mm mortar platoon was devised to move the mortar almost any distance by hand carry, with sufficient ammunition to last for some time without replacement.

The support squad of the reconnaissance platoon, on the other hand, is manned by only enough people to get the mortar in and out of action short distances from the vehicles, with sufficient ammunition in the trailer and body of the second vehicle to provide sustained fire for some length of time. The ¼ ton truck can go almost anywhere foot troops can, and only if the reconnaissance platoon were employed in an extended dismounted action would there be difficulty in providing for the mortar.

Based on this premise, the mortar squads of the mortar platoon of this rifle company were mounted similarly. Placing them in personnel carriers, where they must always move dismounted when the troops move out on foot, meant using the lighter mortar and ammunition. It is felt that normally the mortars can be moved close to supporting positions for the riflemen or tanks by use of the ¼-ton truck.

There will be many who consider it unwise to do this, as they feel that the mortars must be able to go anywhere the foot troops are able to go. That can be done by the use of one or two mortars from the mortar platoon to support a river crossing, for example, the third mortar and additional ammunition coming across later.

The 81mm mortar is much the preferred weapon of the two as far as the troops are concerned, and in the proper hands is one of the most potent offensive or defensive weapons. The advantage of being able to carry the heavier mortar for 95% of your actions far outweighs the loss of one of them where all three cannot be taken into action by the mortar platoon.

The use of the half-track or similar vehicle as is done in the headquarters of the armored infantry battalion for the 81mm was considered. Although a fast method of getting mortars into action, it has rather an inflexible tie to the vehicle. The ¼-ton truck has several advantages, even if the mortar must always be set up on the ground.

Other than the exclusion of the filler personnel from company headquarters, the remainder of the organization is much the same as the rifle company of the armored infantry battalion.

The Reconnaissance Company
(See Figure 6)

This company is again much the same as the one found in the present armored division. Again we have excluded the fillers, to be discussed briefly in Section 6. It will be noted that one type of vehicle has been eliminated, the 1½-ton truck. The advantage of having this particular size of vehicle is outweighed by the elimination of a type.

The employment of this company is envisioned much as that set down by current doctrine of The Armored School, except that it is felt that less emphasis need be placed on its limited defensive capabilities. Rifle strength was added to the platoon to give it that defensive strength, and the use of the standard tank within the platoon will give it infinitely more defensive ability against tanks. This weakness during World War II led to reinforcement or relegation to roles which were unsuited to such an expensive organization.

SECTION 4: BATTALIONS

The Tank Battalion
(See Figure 7)

Here is the basic tactical striking element of the division, the one around which all other units are organized. It must inherently possess all the qualities which characterize the mobile unit—mobility, fire power and shock action. It must have sustained offensive power and the ability to defend itself under all circumstances except a sustained defense.

Therefore, a battalion of 75 tanks accompanied by sufficient rifle strength to provide two platoons of riflemen for each tank company was deemed best to fit the requirements. The minimum rifle strength is provided in the tank company, where it is agreed by most that it is needed nearly all the time. That strength, however, is not sufficient for some of the normal missions of the battalion, so the additional company was provided the battalion commander for use as needed.

The advantages of the organic rifle company are obvious: continuous control, intimacy and confidence of company and platoon commanders, and better continuity of unit training are among the many. Not to be ignored is the advantage of the battalion commander in having his normal support always at hand, tied into his administrative, communications and supply systems.

The four-company battalion is not new, and should require little discussion. In this case the familiar three-element force is supported by the fourth. In a support-type battalion, the four-company concept assumes a different meaning.

Headquarters and service company is organized along conventional lines, with the current trend of increasing cargo truck support accepted. The reconnaissance platoon is continued as in the present tank bat-

FIGURE 4 THE TANK COMPANY

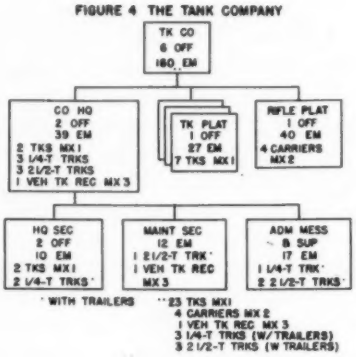


FIGURE 7 THE TANK BATTALION

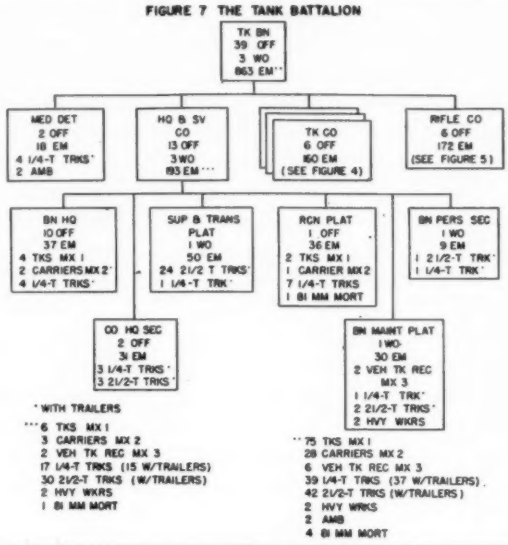


FIGURE 5 THE RIFLE COMPANY

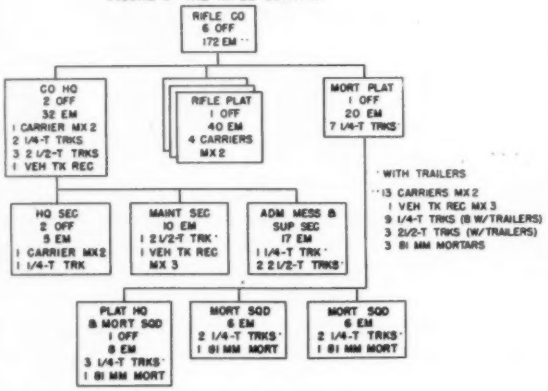


FIGURE 8 THE RIFLE BATTALION

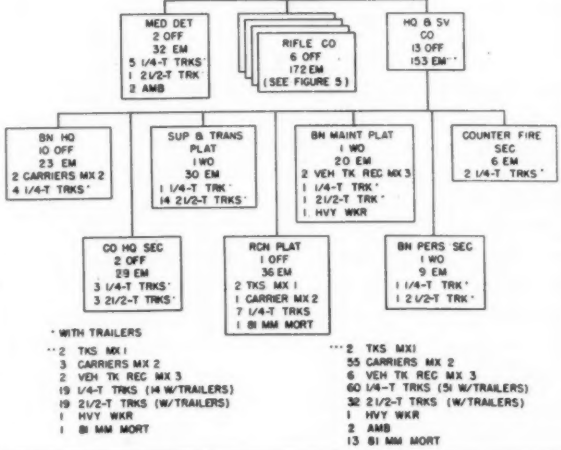


FIGURE 6 THE RECONNAISSANCE COMPANY

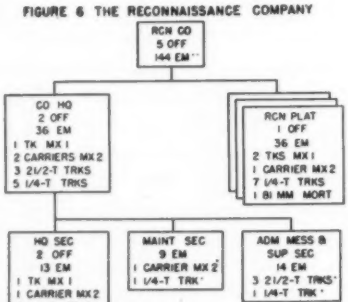
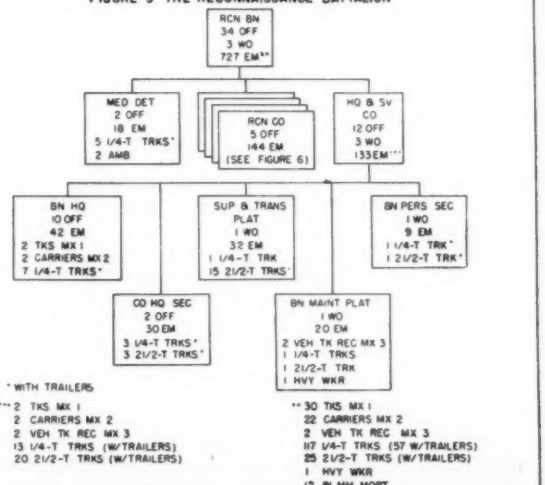


FIGURE 9 THE RECONNAISSANCE BATTALION



talion, with the presentiment that perhaps two of them would not be amiss.

A point to be remembered is that the 81mm mortars of the rifle company are available to the commander even if he is not employing the company, or when it is parcelled out to the tank companies. Too often in the past have we ignored or failed to exploit the potentialities of these potent "small unit artillery" pieces.

The medical detachment is no different from those found in present organizations. It is manned and equipped to provide an aid station and an evacuation system for the battalion, in addition to one vehicle for each of three tank companies.

The reader may note the lack of assault guns in the battalion. This was a deliberate omission in favor of simplification and standardization. The desire of the battalion commander to have his own artillery is understandable, but it is contended that the employment of the assault gun in direct fire has no advantage over direct tank fire; when used in indirect fire the assault gun becomes an artillery piece. If there is insufficient artillery in the division, that should be remedied. As things stand with our present methods of fire control, it is felt that sufficient fires can be massed in support of the tank battalion without the addition of assault guns.

The Rifle Battalion

(See Figure 8)

This is not an infantry unit, much as it resembles one. It is organized for the purpose of supporting the striking elements of the division, and may be employed in any manner which will best provide that support.

In river crossings, sustained defense and in the penetration, this battalion will probably be employed organically. In most other situations it could be apportioned out as seen fit by the division commander. With the organic rifle strength of the tank battalion as heavy as it is, the rifle battalion could be held in reserve a good deal of the time. This would prevent unnecessary dissipation of the rifle strength of the division, materially affecting the sustaining power of the striking elements.

There is no heavy weapons unit in this battalion for two reasons: it normally will be employed in support of a unit of heavy fire power, and the 81mm mortars within the companies provide the medium mortar support. It is possible that the addition of perhaps eight 4.2 inch heavy mortars within the battalion headquarters and service company might be advantageous.

This battalion is the only one to have a counterfire section, for the reason that the tank units are not as vulnerable to mortar fire, and to provide them with this defense seems to be unnecessary. If it proves to be an effective measure against enemy high trajectory fire, let us by all means put it wherever it can be of value.

The four-company organization used here is a different concept from that of the tank battalion. Here we may attach one company to another unit and still have available the triangular organization for organic employment. Assuming six tank battalions and one rifle battalion in the division, the number of other possible combinations is great.

The Reconnaissance Battalion

(See Figure 9)

As with the other reconnaissance elements, this one differs little from that of the present division. The four-company concept was retained, and the headquarters and service company is little changed.

There are many who feel that the reconnaissance battalion, particularly, needs assault guns, as it is employed so often beyond the range of division artillery.

This is a sound argument, and those same people then advance the argument that it is not normal to attach a battery of artillery to provide close support. Perhaps it would be feasible to provide an additional battalion of artillery in the division just for such purposes, with the batteries organized to provide complete fire control and ammunition supply when continuously employed on missions away from the battalion.

There has been advanced also the argument that the present reconnaissance battalion should be reinforced by a medium tank company, as is the battalion of the armored regiment (light). This argument is met by providing the battalion with the same tank as the tank battalion. This is one more argument in favor of the standard tank.

The service facilities of the headquarters and service company have been improved by increasing the number of trucks in the supply and transportation platoon. This was considered reasonable by comparison with the number of men and vehicles in the tank and rifle battalions.

The differences in totals of men of the companies and battalion are mostly accounted for in the four-man tank crew and the elimination of fillers. This will be taken into account when making comparisons with the present division.

SECTION 5: OTHER ELEMENTS

General. It is not intended to discuss those elements of the division which come under the supervision of other arms and services, other than to comment briefly on some desired characteristics and capabilities. Detailed tables of organization of those elements should be written by the arm or service concerned.

In general, it seems that the present supporting elements with minor changes to encompass the different striking elements would be sufficient. These minor changes are not pertinent to this article.

SECTION 6: COMPARISONS

For the purpose of comparison, let us form our battalions into the striking element of the division. It is believed that a proportion of six tank battalions, one rifle battalion and one reconnaissance battalion will serve the desired purpose. The present division has four tank battalions (three medium and one heavy),

four armored infantry battalions and a reconnaissance battalion.

	Nine Battalions Present Division	*Eight Battalions Mobile Division*
Total Officers	355	307
Total Warrant Officers	27	24
Total Enlisted Men	7483	6778[3]
Tanks Light 46	349	482 (MX1 only)
Med M4 216		
Med M45 24		
Med M26 63		
Mortars 60mm 48	80	49 (81mm only)
81mm 32		
Battalion Headquarters	9	8
Company Headquarters	44	40
Tank Platoons	48 (5 tanks)	54 (7 tanks)
Rifle Platoons	48	48
Reconnaissance Platoons	20	19

Some of these differences deserve explanation. It might be noted that officers have been left out of the supply and transportation platoon, battalion maintenance platoon and the eliminated assault gun platoon. It is felt that warrant officers should be used exclusively for all the lower level specialist positions.

The difference in enlisted men can be accounted for by one less man in each tank crew and the filler personnel, plus a little gain from eliminated headquarters.

The difference in tank strength, of course, was one of the main objects of this article. To increase the striking ability of the division while at the same time increasing its mobility without sacrifice of rifle strength was more or less the complete objective. It is anticipated that this type of division might at times take higher tank losses than would a heavier (in weight of iron) division, and that is taken into account on all levels.

[3]Part of this difference is in filler strength. Add 378 fillers for purposes of comparison (rifle companies 10%, reconnaissance companies 5% and tank companies 6%).

The mortar comparison, although seeming to be unfavorable to the mobile division, places all those mortars at company or lower level, whereas all the 81mm mortars in the present division except in the reconnaissance units are on battalion level. The loss of mortars was caused by the elimination of the armored infantry battalion headquarters.

The comparison of headquarters, although not material, is interesting and was used to show the lesser number used to control more tanks and as many rifle platoons.

And therein lies the crux of the comparison. *With 133 more tanks and the same number of rifle platoons, this division will have over 300 less men.* If a four-man tank were used in the present division, the total would be 7134 against 7156 for the mobile division (with fillers).

Conclusion

I have tried as conscientiously as possible to follow the principles set down by Colonel Howze in his article "Mobile Troops of the Future." At the same time I have gone beyond him in rifle strength within the tank battalions. I have not gone as thoroughly into some of the allied subjects as was possible, but I felt them outside the scope of this article. In this category fall artillery calibers, self-propelled bridging, armor-piercing projectiles and allied subjects.

But if the idea of *integrated* rifle and tank strength, used in the lightest and fastest equipment, employed en masse with speed, surprise and shock, is accepted, then our purpose is achieved.

"The evolution of tactics is continuous. Formalism and traditionalism in most armies resist the evolution of tactics."[4] It is to be hoped that this evolution will be aided and encouraged by all members of our armed forces.

[4]Encyclopaedia Britannica, Vol. 21, p 750, 1946 edition.

URGENT

The Organized Reserve Corps has a definite program—an essential mission in the D-Day Striking Force—which requires the active participation of many more Reserve Officers.

Thousands of unit assignment vacancies exist in the 18-25 Division Striking Force, particularly in the company grades.

Reserve Officers who expressed a preference for transfer to the Inactive Reserve (Reserve Officer Survey Questionnaire) should expect to be transferred thereto unless a contrary choice is indicated before 31 December 1948. These officers are urgently needed. If you are one of that group notify the local unit instructor or Senior Army Instructor at once of your (a) availability for assignment, (b) desire to participate in the ORC program, (c) rescission of your expressed preference to be held on an inactive status.

Detailed information is available at all offices of ORC–Senior Army Instructors and unit instructors.

OUR ARMY IN THE WORLD SITUATION TODAY*

by The Honorable Kenneth C. Royall

[EDITOR'S NOTE: Although at the time of making up the table of contents for this issue, more than six weeks have elapsed since the delivery of this address of Secretary Royall's, the JOURNAL feels that its message is applicable in the present instance and that in any event our readers should be vitally interested in the statements of policy which it contains.]

SOME months ago when I announced the subject of this talk, I hoped that world conditions would be in a more tranquil state than they are today—a state that would at least admit of a relatively long-range discussion of our Army program. As the weeks went by with the Berlin situation continuously under discussion with Russia, I began to doubt whether I could talk about the world situation at all without running the risk of affecting in some way the important negotiations in Moscow and Berlin.

But now we have at least reached a stalemate—a stalemate which will probably continue until the United Nations has acted. Under these circumstances I am able to discuss with you to some extent the general world situation as it relates to the needs and missions of the Army at this time and in the immediate future.

At the outset, I would like to make it clear that neither the Army nor any of its civilian nor military officers determines our national policy toward other nations—whether that policy be for peace or for protection against war. Those determinations are for the State Department and the President.

And I take this opportunity to say that in my opinion their decisions—often made after consultation with representatives of both great political parties—that the decisions of the State Department and the President have been wise and courageous—that these high officials have performed a truly remarkable task in averting war for ourselves and others—averting it without sacrifice of our rights or our principles. I do not believe that history has afforded a finer instance of diplomatic success under conditions of comparable difficulty.

The Army has been happy, when requested so to do, to advise with the State Department on the questions in Berlin and Moscow—and to assist in carrying out in our particular field of occupation the national policies which have been determined on.

In order properly to perform its duty in this field the Army must evaluate the world situation as it is and as it probably will be—and not as we would want and hope it to be. For its peacetime tasks the Army must arrive at the best available assumptions. And in planning for the responsibilities which would be imposed by war, the National Military Establishment, including the Army, must estimate both the tangible and the intangible factors of "whether," "when," "where," "how," and "what."

Let me assure you now, as I will again, that in my opinion—a truly humble opinion—war is not imminent. In absence of some accidental or unintentional occurrence, I do not envision a war in the near future, if we remain strong and prepared enough to convince the world of our ability to meet successfully—and to win—any conflict which might be forced on us.

But we must realize that the determination of war is not in our hands but in the hands of a few despotic and powerful men—men who may or may not be representative of their nations. And it is the timing only, and not the ultimate purpose of these men that is uncertain.

For the Communists of the world's leading totalitarian government tell us—tell us time and again—that the objective of Communism is to establish and operate a world-wide system of Soviet-dominated Communist governments—a world empire. Nor do they make any secrecy as to how this is to be brought about. It is by world revolution. Karl Marx, the real father of Communism—to whose doctrine Lenin and his followers subscribe—Marx declared: "Force is the midwife of every old society pregnant with a new one."

And we have seen the workings of this plan unfolding before our eyes, as Communism's dark shadow has spread over Europe, destroying, by steps short of war, the independence and democratic character of a long list of nations, known to all of us.

Emboldened by these successes—successes accomplished by fraud and by sneeringly camouflaged force and oppression—so emboldened, the Communist hierarchy sought to apply pressure tactics to America and other nations—by imposing an illegal and totally unjustified blockade of the rail and road traffic between Berlin and the Western zones of Germany.

Here again, typical of all totalitarian aggression, excuses were offered—excuses which found support neither in sincerity nor in recognition of obligations nor in simple veracity. Their approach is that of the still existent legal species—the shyster lawyer. In this case it is an international shyster that is operating.

The blockade was first explained on the ground of

*From an address before the National Guard Association.

"technical conditions." And when this pretext fell by its own weight, the Soviets gave as an excuse the proposed three-power government in the Western zones—a plan which the Soviets well knew to be the necessary result of their own intransigence in the Allied Control Council.

Then they shifted their "alibi" to the question of Western currency reform and its application to Berlin —although here again the Soviets knew that they themselves had turned down the proposal for a four-power German currency—and had also rejected the use of their own Soviet currency in Berlin if used fairly and under adequate safeguards.

A wise old farmer in my state once said to me: "Don't never do no business with a man who don't mean to do right." But unfortunately our government has not been able to follow that rule. In a rapidly contracting world the interests of peace have made necessary an effort to deal with the Soviets on the Berlin situation as well as on other matters.

This effort has been as hard as it has been disappointing. A recent agreement in Moscow to remove the blockade merely served as an excuse for the Soviets to seek in Berlin an additional blockade —this time on the air lift. Another agreement for Berlin trade and for Soviet currency in Berlin under four-power control was perverted to a Soviet proposal to give to its agents such unilateral power over currency and trade that they could, if they wished, force us out of Berlin in a matter of weeks.

The Honorable Kenneth C. Royall, Secretary of the Army

Of course, these tactics have not succeeded this time, but they have created a danger to the peace of the world. Hence, we have referred the Berlin matter to the United Nations. We have announced our determination in the meantime to stay in Berlin, and this we intend to do.

The Berlin situation has been outlined to you because it clearly characterizes the Communist attitude which the National Military Establishment must take into account in its plans and preparations, and which the Army has to deal with in peace as well as in readiness for a possible war.

One present peacetime activity of the Army, which is important and to some extent unique, is our occupation duty. Three years and more after the fighting of World War II stopped, we have three hundred thousand soldiers—and twenty thousand Army-employed civilians—engaged in these duties on foreign soil and many thousand others in support.

These occupation duties of the Army are spread across the globe—Germany, Austria, Trieste, Japan, Korea and certain Pacific islands. The area occupied is about that of the United States, and the population—140 million—is almost as great as ours.

These Army forces are peaceful emissaries of a peace-loving nation—not war tools of an aggressive and selfish nation. The lands they occupy are not merely conquered, they are truly liberated—freed from totalitarianism and all that it implies.

We are seeking to keep them free—to substitute democracy with its attributes of personal freedom, with its hope for a fuller life and a finer sense of individual dignity and decency. And we are moving to rebuild the economy of those countries, so that they may become self-supporting—and strong enough in every way to take their place among nations of the world.

The Army is proud of the signal success which occupation has achieved and is achieving. We are proud of our leadership in those foreign lands—General Clay and General MacArthur and General Hodge and General Keyes. We are proud of our men and officers—and of our civilian employees, who have handled such trying situations—have handled them with cool courage and without truculence.

The Army has other collateral tasks around the globe, including military missions which, in Greece and Turkey and China and elsewhere, are helping both to build up the peacetime strength of other nations, and also to advise and counsel them as to their military defense needs.

All these activities—as important as they are and as many men and dollars as they involve—are in a sense removed from the Army's primary mission. This mission is to serve as a part of the National Military Establishment in defending our nation and its principles against any warlike attack which may be launched against us.

For this purpose we again need troops outside our continental borders—in Alaska, in Hawaii and Guam, in Panama and the Caribbean, as well as in the occupied zones.

But we must also have troops here at home—antiaircraft and other units to protect against attack by saboteurs or even by a possible airborne or seaborne enemy. And there is vital need for a mobile striking force large enough and flexible enough to meet the urgent and varied defense requirements which would arise if a war should suddenly come.

We know today that the Soviets maintain more than 4 million men under arms and support a military establishment that would cost America 35 billion dollars a year. And with no threat of aggression against Russia

and no strong nation on its borders, we know that this force is being maintained for some future purpose other than defense.

We do not suggest any such Army for America. Consistent with established American policy, we seek to reduce our figures to the minimum—to the barest minimum needed to meet the uncertain conditions existing in the world today. We believe that bottom figure is 900,000 Regulars, including one year trainees. Under present plans this figure will be reached by next June. We now have 625,000.

The 900,000 will give us 12 Regular Army Divisions at home and abroad, plus supporting artillery, armor, antiaircraft, engineering and service units, and in addition, will provide antiaircraft protection for our cities and important installations, including particularly, atomic plants.

This proposed Regular Army—even when supplemented by the presently foreseeable National Guard and Organized Reserve—all of this is not a guarantee of full protection of our nation. We are still taking a calculated risk—a risk which for wise financial and economic reasons we must assume.

The President has wisely announced a national defense budget of 15 billion dollars for the next fiscal year. In the absence of some greater emergency this limit cannot be exceeded. The rising costs of equipment and supplies of every character and the necessary increase in salary scales materially reduce the national defense structure which can now be bought for even this large amount of money.

We cannot hope to attain the ideal for the Army or for any of the other components of the National Military Establishment. In allotting the available funds we must make choices—choices which will not be entirely acceptable to anyone, but which will give the best over-all defense for the money that is at hand.

There must be an allocation for a sufficient and competent National Guard and an effective organized Reserve. The Regular Army is, of course, our first line of defense and will serve as a nucleus for expansion in time of war. But the Army fully recognizes how dependent it is—and ever has been and will be—on the fine service of the civilian components.

From the standpoint of the National Guard, not only are we including 6 selected divisions and supporting Reserve troops in our initial wartime force, but we also are counting on the maximum National Guard aid—and Reserve aid—in the successive stages through which our Army will develop in the years ahead.

There is one thing we must all bear in mind—Regulars and civilians soldiers—that we are members of a single team which cannot succeed without cooperation. Rivalry for the sake of rivalry, or for the sake of personal or unit advantage, will only undermine the whole structure. If we never forget the objective—the objective of adequate national defense—then the entire Army will grow in efficiency as it grows in size.

I talk of a war which I sincerely hope will never come. And, against the lowering and threatening backdrop of world conditions and realities, our military strength on land, sea and air furnishes the brightest and most hopeful light on the stage of peace.

We have learned from the facts of history that we cannot with safety walk unarmed through international uncertainties, with reason to be unafraid merely because our hands are clean and our intentions honorable. Such an attitude would today constitute an engraved invitation to disaster, a gilt-edged passport to a war of imposition.

Finally, I need not remind this group here that the adequacy of the entire Military Establishment is dependent upon the opinion and the support of all America. Our Army is a people's Army, delegated by the whole nation to do a job for the whole nation. In a democracy such as ours, the Armed Forces are just as weak or strong as the people will them to be.

And so it is that in other nations America's war potential is in large part judged by the expressed attitude of our people here. It is to me a matter of deep concern when men of prominence preach unrealistic doctrine of pacific weakness—of faith without works. It offends me when I realize further that the faith they preach is a synthetic faith—with personal and partisan ambition as its catalyst.

There can be no doubt in the minds of any reasonable man that the preachment of one of the candidates for the Presidency has strengthened the hands and wills of our enemies, and has added to the difficulties in Berlin and elsewhere—has added one more element of uncertainty in an already disjunctive world—has hurt the chance for peace, not helped it.

Nor do I have patience with the second-sighters who, without ever having had any responsibility for the decisions, rush to tell our officials what they should have done. These second-sighters do not commend themselves to me either by their approach or by their motives—or by their accuracy. So far as I have been able to see, the courses which they propose by hindsight would have enhanced our difficulties and would have more seriously endangered the peace.

If these men of influence who criticize the past really want to help, let them make realistic suggestions—and on-the-record suggestions about the present and future. No purpose can be served by carping criticism of things behind us except to weaken confidence in our national leaders at a time when that confidence is needed not only at home but across the seas.

I bespeak from this organization and its members a full and wholehearted support for our national policy and for the military means which support it. As for myself I have full confidence that, if we can continue our policy of fairness, firmness, firepower and faith—I have confidence that in such event—despite the gravity of conditions and despite ruthless forces afoot in the world—we can continue to have peace in the period which lies immediately ahead.

FROM ARMY HISTORICAL RECORDS:

FIRST BLOOD!

An account of the Action of the 41st Tank Battalion in the Battle of the Bulge

THIS is an account of a tank battalion "task force" which refused to be awed by the power of Von Rundstedt's breakthrough. Attacking under severe handicaps, and at a time when other troops in the area were either stopped or were defending, the men of the 41st Tank Battalion (11th Armored Division) plunged forward with a spirit which became the inspiration of their associates.

The ever-shifting fortunes of war had so dealt the cards in the closing days of 1944 that the 11th Armored Division was subjected to a dizzying series of changes in orders which turned it from the Le Havre docks to Cherbourg, there to plan the further containment of the enemy forces in the St. Nazaire area; then, before the debarking was half completed, the swift thrust of Hitler's *panzertruppen* in the Ardennes caused another about-face and sent the columns of the 11th hurtling across France into the Bastogne area and into a situation, the import of which was only dimly understood by the merest handful of officers.

It was a bitter dose to take as one's first taste of medicine. The headlong dash to the assembly areas, the terrible uncertainty of the general tactical and strategic situation, the biting zero weather of the Ardennes highlands, the forbidding darkness of the forests; all are familiar factors to the many divisions and separate units which took part in the Battle of the Bulge. Almost the sole favorable factor was the surprisingly good tank ground which lay between the patches of rolling woodland.

In its advance, the 11th had been held to strict radio silence. In view of the fact that a large number of the radios had been issued immediately prior to departure from England no time was available for tuning and otherwise getting the sets and nets in shape for combat. On top of this, the division was committed to action even while its rear elements were closing in the Bastogne area. In effect, this resulted in a less than 50% effective communications system on the first day of combat and was no doubt the greatest handicap under which the troops operated.

On arrival the men of the Eleventh quickly absorbed the full import of events. The valiant 101st Airborne was holding out in Bastogne, its siege having been broken by the swift action of the 4th Armored Division to restore its supply lines. But the 4th was immediately withdrawn and the only brothers-in-arms which were visible to the newcomers were the plucky remnants of CCA of the 9th Armored Division, holding just west of the town of Bastogne. The Germans were still very much on the offensive with, as later reports showed, two divisions engaged in pressing southward to widen the flanks of the Bulge salient. However, this pressure worked against them in the end, for whatever may have been the adverse effect of radio silence on operations of the 11th it had served to keep secret the imminent attack of the Division and a headlong meeting engagement ensued in which the Germans were unquestionably surprised.

As matters stood, it fell to the lot of the 41st Tank Battalion (reinforced) to bear the brunt of the attack of the entire division. Acting as the left of a two-column task force of CCB, the battalion, led by Lieutenant Colonel Wray Sagaser, displayed a ferocity and a tenacity of purpose which made it responsible for the major gains of the entire division during the Bulge operation.

The JOURNAL staff was able to find in the files of the Historical section of the AGO an account of interviews with the battalion commander and members of his staff which needed little or no editing to bring out the problems with which many other similar commands were faced during those trying times. In the paragraphs which follow, the thread of narrative will be taken up by the historian of the day.

* * *

The battalion was in top-notch shape when it went into combat, despite the rugged, swift march across France. Equipment could hardly have been in better condition. The men had time to prepare certain improvements while in England. They built rails around the outside of the turrets; constructed luggage carriers on the rear decks and were thus able to put all their bedding rolls and field bags outside of the tanks, which made for more efficient work during combat. They were able to cut the sides off the fenders to make a place to hang the track extensions in such a way as not to sling mud on the sight of the driver. They put hooks on the rear of the turrets in order to hook down aerials. These were just examples of some of the improvement made mostly developing from observing other divisions already in combat. The battalion was almost up to T/O strength when it went into combat, being short about 12 men, each company being short not more than 3 or

4 men. Shortages were due to last minute AWOLs and a few foot diseases. Most of the men were in excellent physical shape.

As to equipment, there had been some difficulty in obtaining enough overshoes. But the men were up on their bedding, combat boots and other personal equipment. About 1/5 of the combat load of ammunition had been drawn in England. Advance elements of the battalion had made arrangements to pick up the rest en route. By the time the battalion had arrived, it had a complete combat load.

The battalion closed in the Bastogne area on the evening of 29 December at about 2330, and word was immediately received that an attack was to be made the following morning. None of the battalion staff was very much pleased at the news, inasmuch as the battalion had just completed a 120-mile march that day. There was no opportunity for advance reconnaissance, for it was already after dark and the move up was to start before daylight. There was opportunity only to consult a few maps. Cannon had to be boresighted after the approach march was under way.

It had been planned to get under way at 300600, but the battalion actually left at 0615 because of congestion on the main highway to Bastogne. There was no activity on the way up, but the LD (vicinity Morhet) proved to be in enemy hands as a result of an enemy counterattack against CCA of the 9th Armored Division the preceding night. Accordingly, a nearby road junction was selected as the LD, with the axis of advance Morhet-Lavaselle. Lavaselle had been picked on the map as the initial objective, but it turned out to be a very poor objective because like so many towns in the area it was in a bowl surrounded by high ground which commanded all approaches and from which the enemy could inflict great damage upon forces attempting to enter the town.

A platoon of the 41st Cavalry Reconnaissance Squadron was planned for use as an advance guard until contact was established, whereupon it would be switched as a left flank guard. However, the platoon got nearly to Lavaselle without establishing too much contact, so it pulled back after 15 or 20 minutes to the Morhet road.

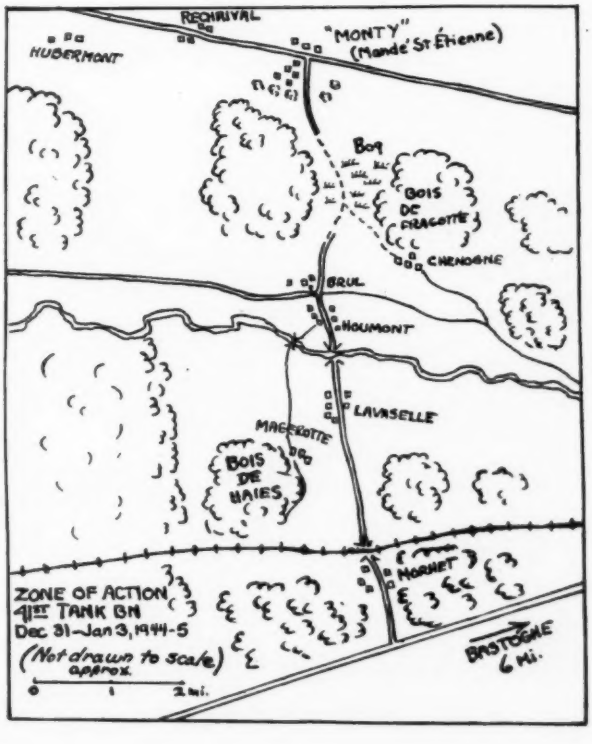
The main force proceeded up the Morhet road with the light tank company leading, one platoon of lights acting as left flank guard. Company A with two platoons abreast advanced between the two trails Magerotte-Brul and Morhet-Lavaselle, with B Company (two platoons abreast) on line to the right of A. C Company proceeded in reserve 300 to 400 yards to the rear. All companies advanced across country. Opposition was not initially very stiff, and consisted mainly of enemy infantry that had infiltrated into the area. Very few casualties were suffered in advancing toward Lavaselle, and the area of the objective was reached at about 1030.

Seeing that Lavaselle was in a hollow and not a logical place for an objective, Colonel Sagaser elected to push his battalion onward to the high ground in the vicinity of Brul and Houmont, which in effect controlled Lavaselle.

There was some difficulty encountered in crossing the stream near Lavaselle. A bridge had been blown, and another bridge had a crater blown in the center, yet was still passable at an easy pace. Some of the tanks crossed the latter bridge, but most of them took a running jump and tried to cross the stream by getting a fast start. Four or five tanks were hung up for a short while crossing the stream, and mortar fire started to descend on the stream line.

D Company met considerable smallarms fire from the Bois des Haies de Magery while going through Magerotte, but for the rest of their journey along the left flank of the battalion, D Company was protected by a cut which enabled them to proceed in defiladed position toward Lavaselle. Both assault companies met a great deal of smallarms fire in both Brul, and Houmont, but A Company pushed a platoon into Houmont and started to mop up the resistance quickly. The Houmont church had been used as an enemy OP, and a German staff sergeant was taken prisoner there, slowing up enemy artillery fire.

Company A of the 21st Armored Infantry Battalion had been attached to the 41st, and the entire force was known as Task Force Poker. The Armored Infantry dispersed around the tanks and went through the towns dismounted to assist in cleaning up. About 75 to 100 enemy troops surrendered in Houmont; they had few weapons of large caliber, but possessed mortars and bazookas and two antitank guns. In view of later developments, the battalion had comparatively



light resistance in taking Brul and Houmont.

After the battalion had entered and organized these towns for defense, the enemy started knocking them with artillery and mortar fire from Hubermont, Rechrival, and the woods northwest of Chenogne. Being the only battalion that had moved out that far, it received fire from nearly every side. What seemed like an artillery preparation for an enemy counterattack decended, but the expected counterattack never materialized. Several casualties were suffered from Nebelwerfer and direct fire weapons, and one company commander was lost when Nebelwerfer fire sheared both hatches off his tank in a direct hit. Most of the casualties were suffered after dusk when resupply necessitated personnel dismounting from their vehicles and congregating in small groups, which made them vulnerable to shell fragments. Total casualties for the first day of operations were 6 killed and about 25 wounded.

When they had set up in position, defensive fire plans were worked out. Lieutenant John Grayson, who acted as an artillery officer on the battalion staff, lined up the six 105mm assault guns and fired them in battery. Regular artillery support, which had been nonexistent at the start of the operation due to faulty communication returned to normal and was used effectively.

The general plan for the advance was to have the reinforced 21st Armored Infantry Battalion (TF Pat) take Chenogne, while TF Poker on the left was to support this force by fire, covering the woods northwest of Chenogne while TF Pat (the 21st AIB plus a company of the 41st TK BN) moved into Chenogne.

CCB was ordered to move up, with its first objective the woods east of Houmont, and then the woods southwest of Mande-St. Etienne. The 21st Armored Infantry Battalion actually moved into Chenogne and then were pushed out.

TF Poker stayed in the vicinity of Houmont and Brul on 31 December, and waited for TF Pat to come up abreast and take Chenogne. On 1 January, TF Pat took Chenogne for keeps.

Signal Corps

A memory-provoking scene.

The massed artillery fire of 12 battalions in a "serenade" preceded the 1 January attack of the task forces on the woods north of Chenogne. Various observers reported that 550 enemy bodies were later found in these woods north of Chenogne, apparently most of them killed by artillery fire. The members of the Battalion were very enthusiastic about the results of the artillery serenade and said that its presence provided a marked contrast to the first day's jump-off when there had been no artillery support to speak of. Timing of all phases of the attack was just about perfect.

The reinforced battalion jumped off at 1100 on 1 January with medium companies abreast, and the light tank company as rear and left flank guard.

This attack was far better coordinated than the preceding day's, not only because of the presence of the artillery support, but because commanders could see the terrain over which they were to fight, and make necessary reconnaissances. C Company started out on the left flank and A on the right flank, the plan being to have them converge and meet at a point of woods from which the armored infantry would comb the area dismounted. The armored infantry followed closely behind the tanks in their half tracks, and the plan was timed to perfection. No tanks were lost and only a handful of men wounded. Many enemy prisoners were captured when the infantry started through the woods; they were men from all branches—air corps ground crews, engineers, former tankers, and others who had been converted to infantrymen. Most of them fought stiffly until surrounded, then surrendered fairly easily.

The enemy defense in the woods apparently never contemplated the use of armor in mass. Tanks were used as tank destroyers and did not move around to a very great extent. Three to five tanks or anti-tank guns might back up a battalion of enemy infantry. These tanks would always fall back in the face of our attack and try and preserve their integrity as long as possible, firing as mobile anti-tank guns.

At about noon on New Year's Day the 41st Tank Battalion tanks reached a point on open ground along the trail running northeast from Houmont. The infantry having cleaned out the first patch of woods south of the Monty-Houmont trail, mounted up on the tanks, 8 or 10 to a tank. There was about an hour's delay, and enemy artillery started falling on the concentration area. The tankers were protected, but the armored infantry mounted on the tanks had a rough time from this artillery fire.

The CCB commander was pressing for the force to drive on to secure a thin line of trees just southwest of Monty and northwest of the main Bois de Fragotte. Hence, between 1330 and 1400, the task force jumped off in a column of medium companies, A Company leading, followed by C with B in reserve. Company B supported by fire from high ground, while the two leading companies advanced by bounds. First blood was

drawn just as the tail of C Company had cleared from the line of departure, when a Mark IV tank was knocked out along the Bastogne road. Very shortly a stiff fight developed. The ground chosen for the advance turned out to be soft and boggy. Because of this fact, the enemy did not initially expect a penetration at this point and took a little time to adjust his fire on the boggy approaches. But when it became apparent that this was to be the axis of advance, the enemy trained all weapons in the chosen corridor of approach.

The 3d Platoon of A Company was leading the force in platoon wedge formation, when the entire platoon became stuck in the marshy ground. Direct fire weapons immediately opened from along the Bastogne road and picked off the sitting ducks one by one, virtually wiping out the 3d platoon. Direct hits were scored from the Bastogne road and also from 75mm and 88mm fire which came from the high ground around Mande-St. Etienne. This scotched the entire plan to move across and take Monty. The entire tank battalion then maneuvered into position where they could fire through an entrance to the woods. In this critical period, the task force was handicapped by two things—a lack of sufficient dismounted personnel to protect the tanks; and the terrain, which as well as being soft also hemmed in the approaches on all sides by woods. And the battalion had by now learned that every patch of woods was a potential enemy strongpoint. The enemy had excellent defensive positions and prevented any additional penetration toward Monty on that night. It had been planned to feed the tanks through the gap one by one, but darkness and the ferocity of the enemy resistance prevented such a move.

After dark and all night long on 1 January, the task force heard the sound of burp guns in the area. The tanks backed up into the woods for cover, and their personnel was protected against the artillery in their buttoned-up vehicles. The armored infantry, however, suffered casualties from three bursts which did not damage the tanks because their force was lost. It was most apparent that although it was a good practice for the tanks to seek wooded cover, it would be a far better practice for the infantry to dig in in the open.

All night, artillery fire joined in with the burp guns. The task force on the right sent out numerous patrols, met numerous enemy patrols and there ensued small skirmishes interspersed with periods of silence before more hostile artillery would descend.

The problem of resupply and refueling was very difficult on the night of 1-2 January. About 2400-0100, Lieutenant Edwin Justice, platoon leader of the Reconnaissance Platoon of the 41st Tank Battalion, ran a light tank from the Lavaselle area along the Houmont-Monty trail to see whether it would be clear for the supply vehicles to go through.

Fortunately, Lieutenant Justice hit no mines; but he dragged a road block out of the road and opened the way for the supply trucks after flushing some German infantry out of the bushes; then, in the early hours

Signal Corps

That winter of 1944!

of the morning, 25 vehicles lumbered down the trail with ammunition, food, water, fuel and maintenance personnel and vehicles.

During the critical period when the battalion was around the open position between the woods, the enemy could not actually deliver observed artillery fire directly, but any large movement of vehicles in one area was easy to pick up and it drew artillery. The task force felt very insecure in the position, but made the best of circumstances by using a platoon of the 41st Cavalry Reconnaissance Squadron to outpost the Battalion CP and the right flank, while the light tank company outposted on the rear of the positions on high ground.

The platoon of the cavalry reconnaissance squadron also conducted route reconnaissance prior to the jump-off the morning of 2 January. It had become evident that the position in which the troops had halted was most unfavorable and that an immediate advance was essential to the higher ground near the towns of Monty and Mandé-St. Etienne. Considerable movement could be seen in the area of the towns, and shifting of enemy troops, but no observer knew the significance of this movement. Reconnaissance to determine passable ground for tanks was finally completed and at 1500 hours an artillery preparation and an air strike were placed on the towns.

The battalion jumped off at 1600, in a coordinated jump with the infantry on the right. C Company of the 41st Tank Battalion was attached to the 21st Armored Infantry Battalion task force for the operation, while A Company of the 21st AIB remained with the 41st's task force. While B Company of the 41st supported by fire, A Company made a direct frontal assault with platoons abreast.

The artillery and tank fire set the towns ablaze, but it was not until after dark that the combined forces entered Mandé-St. Etienne. After getting into town, a medium tank was destroyed by a direct fire weapon.

There was considerable scuffling with hidden enemy infantry who refused to admit defeat. The enemy remained in the cellars of the town and sniped all night, after the task forces entered about 2000. The only thing to do under such circumstances was to sleep with the enemy and wait until morning to clear up the confused situation.

On the night of 2 January, the enemy was expected to counterattack and try to attack the town. A report was received at 2330 that an enemy armored column was driving down the Bastogne road toward Mandé-St. Etienne. A wall of artillery was registered in front of this phantom column, but it never actually appeared to menace the occupants of the town.

At 0800 on the morning of 3 January, elements of the 17th Airborne Division relieved the task forces in Mandé-St. Etienne, and the battalion moved back to rest area. The staff went over the situation with the officers of the 17th Airborne, and a supply of .30 caliber ammunition was turned over to the elements of the 17th Airborne when the 41st Tank Battalion departed.

Total battalion casualties for the operation from 30 December to 3 January were 112, of which 25 were killed. No light tanks were lost, and 12 medium tanks were knocked out. Replacements on these tanks were plentiful during the period between operations, but no personnel reinforcements were received. Of the medium companies, A had been the hardest hit during the first operation, largely because the 3d platoon of A had been wiped out when it became bogged down and mousetrapped near the woods gap. C Company was in the best shape aside from the light tank company, which had been used mostly for flank and rear guard protection.

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The records indicate that the interviewer classed the conduct of the 41st Tank Battalion throughout its initial action as superior. This classification is not too much nor should it be surprising.

The records also show that this organization and the division to which it belonged were one of the few units remaining in the States in the summer of 1944 which were not gutted by withdrawing trained personnel and sending them elsewhere as replacements. Consequently, the teamwork necessary for the excellent timing shown in the several attacks was first developed and then preserved.

It is also noteworthy that after entering combat practically without radio, the entire communications system was restored in the midst of battle conditions within twenty-four hours.

But perhaps the most important lesson to be gained from this account is the fact that attention to the details of coordination pays great dividends. A "serenade" by twelve battalions of artillery is indeed a lot of artillery fire. But greater concentrations have been fired in other battles without a commensurate return. On this occasion, apparently the troops were on the objective almost as soon as the sound of the last round had died away. As a result, we see an enemy dazed and unable to resist, after hundreds had already been killed by the terrific artillery concentrations. The cost to the attacker: negligible!

A contrast is evident in the attempt to exploit this action. The task force commander displayed commendable boldness in immediately moving ahead before the enemy could recover or shift to meet the new threat. But his luck ran out and his leading tanks bogged down in a narrow passage which, having been in enemy hands, had been impossible to reconnoiter. By the time the situation had been adjusted the enemy had indeed shifted and was able to bring a destructive fire on the narrow route of approach which cost the major casualties of the entire action. Nevertheless, it was a true tanker's choice. For had time been taken out to make a careful reconnaissance, the enemy would have recovered anyway, with the same result. On the other hand, had ground been firm, a very decisive victory would have been scored which undoubtedly would have made the attacks of the next day unnecessary.

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There appear to be many instances of detailed actions such as the foregoing in the files of the AGO. Some of them are so written as to require their continued retention in a restricted or confidential category. The ARMORED CAVALRY JOURNAL staff intends to sift the files for additional printable data, especially where it appears to have a lesson which applies to tomorrow's training. The reader is urged to write the Editor to recommend a search for battle experiences of which the reader may have personal knowledge, or to indicate his preferences as to how material of this nature should be treated.

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THE PLACE OF ARMOR IN THE MODERN DAY ARMY

by Major General William G. Livesay

FROM AN ADDRESS BEFORE THE ROYAL CANADIAN ARMORED CORPS ASSOCIATION

IT is interesting to note that the development of Armor in the Canadian Army has almost exactly paralleled ours, and there has been close cooperation all the way. Both of us have gone a long way in the armored field in the past ten years. At Fort Knox, they still remember the close association of the fathers of Canadian and United States Armor, your General Worthington and our late General Chaffee. This Association has been continuous, and I am sure it will go on.

For a century and a quarter, our peaceful, undefended common boundary separating two democracies has been the envy of the peace-loving peoples of the world. For 30 years, during which have occurred two wars, we have stood and fought shoulder to shoulder. Today we are even closer, being bound together not only by a common language and heritage, similar customs, and a mutual dependency in many fields, but also by closely associated national defense problems.

I shall point out to you briefly my concept of the place of Armor in the modern-day Army. In doing so, I think it well that we consider first the place of an Army in a modern national defense organization.

I am sure that you will agree that warfare is conducted primarily from fixed land bases. These bases may be for the use of ground, air, or naval forces, or for the use of a combination of such forces. From these, forces sally forth to attack the enemy. Because these bases are so important to the scheme of modern war, they are naturally the primary targets or objectives of enemy forces—air, ground, and sea. They must be defended in order that we may use them or in order that our enemies may not use them to launch an attack on us. The only force that is capable of defending such a base, if it is accessible to the enemy by land is a land force or ground force supported by air. If it is not accessible by land, capabilities exist today to assault the base by airborne operations, perhaps by seaborne operations, or by a combination of such operations. Land forces are needed to help cope with such enemy ventures.

Considering for the moment that it may be possible for air power alone to destroy the enemy's will to fight and to thus reach a decision, the protection of the bases which air power must have, and the occupation mission after the decision is reached, are jobs for land troops.

I am convinced that we shall see the need for land forces continuously so long as mankind commits the folly of engaging in warfare.

Less than ten years ago, when Germany overran France and the low countries, they had less than 2800 operative tanks west of the Rhine River. Today we have set up nearly 3500 tanks in our so-called Type Field Army. We have even placed in or made available a total of about 200 tanks for each infantry division. Thus, we see that in a short span of ten years our Army has virtually become an armored Army. It is significant to note that throughout the world, the Armies of great military powers have gone to Armor to the extent of their nation's economic capabilities.

To us who live in North America, the development of Armor for use in warfare has been a great military benefit. It has enabled us to take advantage of our abilities in production and in mechanical aptitudes to effect decisive action on the battlefield against opponents who are capable of mobilizing far greater manpower. Mechanized warfare best fits our capabilities. We must and will continue to develop this great advantage.

This brings up the matter of tank development. The tank of ten years ago is as outmoded today as is the Model "T" Ford in the automobile field. In sight are tanks that will have revolutionary improvements in many fields—engine power, gun power, driver control, power transmission, fire control, etc. Development in the armored fighting vehicle field must and will continue.

I am unable to consider the question of Armor in the modern-day Army without considering the question of military teamwork. When we think of Armor, we think of teamwork. It wasn't many decades ago that we had what was known as land wars and naval wars. We had battles that were known as infantry battles and cavalry battles. That situation is practically nonexistent now, and will exist to an even lesser extent in warfare of the future. Now in planning a military operation, it is necessary to consider teamwork between allies; and teamwork among air, ground, and naval forces; and within the Army itself, we must develop fully the team-

work among infantry, artillery, tanks, and engineers and service support elements. Warfare has become very complicated. Certainly we will not have tank battles alone of any great scale. Battles will involve all arms.

Before the last world war, we used to speak about the infantry-artillery team; now that team has given way to the infantry, tank, artillery, engineer, and tactical air team.

To launch a modern campaign requires careful and detailed planning. That planning extends not only throughout the combat zone, but into the communications zone, into the Zone of the Interior, and there into the mine, the factory, and the farm—all elements of the population are involved. In the future, the whole population will be on the nation's defense team.

Teamwork throughout is important. Those of us who are closely associated with Armor must not lose sight of that essential teamwork, for teamwork is especially vital to armored operations.

Many of you recall that in the early days of armored divisions, the percentage of tanks was very large as compared to the infantry component. We have found that to balance the team, nearly all components other than tanks needed to be increased in our armored division. The infantry component has been increased from nine companies to sixteen. We have also increased the artillery, engineer, and service components of the armored division.

We have also increased the tank component of the infantry division.

The question that may well follow is whether we ought to have a common or universal division, since we have increased the tanks in the infantry division and the infantry in the armored division. To that question, our answer is no. While it is true that the roles of these two divisions overlap, primarily they do have separate roles and two types of divisions are essential to a modern Army.

In Texas, they say that only fools and newcomers predict the weather. Probably in the field of military operations the same saying should apply when one attempts these days to predict the future of warfare. However, we must forecast the future the best we can, or else we would be unable to make future plans.

Therefore, I shall briefly summarize what I believe to be the future of Armor in so far as the next few years are concerned. In doing so I am not unmindful of the effect of the atomic bomb and guided missiles on military operations.

First, Armor will continue to be an increasingly important component of the army team.

Second, Tank development will continue, and we will see greatly improved armored fighting vehicles of all kinds.

Third, The need for teamwork among allies in the national defense team, and within the Army will increase in importance.

Fourth, Tank units will continue as components of the infantry divisions of the modern Army, either as organic elements or as units capable of being attached to such divisions.

Fifth, Modern armies will continue to have armored divisions to be teamed with infantry divisions in a corps or field army framework.

Officer Veterans of the First Cavalry Division who would consider a return to active duty for a tour with their old outfit may explore the possibilities and receive advice by writing to the Chief, Cavalry Branch, Career Management Group, P & A Division, The Pentagon, Washington, D. C.

Major General William C. Chase, Commanding the "Famous First," urges all concerned to plan a return to the ranks for as long as possible and as soon as possible.

Have We Perfected the Air Strike?

by Colonel Wesley W. Yale

Experience of the past and development of the present point up the needs of the future in the important area of air-ground coördination. Our departing Editor bows out with an appraisal of a significant subject.

WHEREVER Armored men gather, the talk sooner or later turns to the matter of tactical air support. To the tanker and the Armored Infantryman of World War II an air strike only too often meant the difference between life and death or at the very least the turning of possible defeat into victory. On the other hand, the splendid communications system of the armored divisions rendered them much easier to work with, from the airman's viewpoint, than almost any other type of troops. Pilots were comforted, too, by the relative ease of identifying friendly panelled tanks and the ability of Armor to furnish on short notice a covering fire against hostile AA weapons delivered in support of an air strike. For these reasons, the tanker and the airman in the ETO probably forged closer bonds than other types of combatants in the ETO and elsewhere.

Nevertheless, it would have been interesting to see how Armor and Navy Air would have functioned together in like circumstances. The Navy system of tactical air support differs in some respects from that employed by the Army air in the ETO. These points of difference, as set down here, may prove a desirable thought-stimulant to those who are familiar with ETO air-ground operations and those who recognize the vital need for even closer cooperation between the arms in wars of the future.

Let us hasten to say that there is to be no criticism, even implied, of the fighter squadrons who cheerfully braved weather when they "should have stood in bed" in order to blast opposition from the tankers' path during the far-flung battles which stretched from Normandy to the plains of Central Europe. Many of our friends in Army and Navy air have voiced their approval of the simple thoughts which we wish to bring out. And on the streetcar of Ideas, there is always room for one more.

Some thoughtful leaders who served with Armor profess to see a considerable difference in air support of troops which are fighting in march column on a road, as opposed to the support of those which have been deployed into action on a relatively broad front. Certainly it is far easier for a pilot to pick up the contending forces on a road and to identify the targets to be attacked by reference to the head of the column. Once the deployment has taken place, however, identification becomes difficult. The opposing troops are hidden by foliage, by buildings or by the blending colors of vehicles, men and terrain. Dispositions are often confused, salients in the line being apt to cause an air strike against friendly troops. Moreover, the ground troops themselves often become uncertain as to their own position on a map, especially in rolling and wooded country where good roads are infrequent.

It will be a great mistake if we are content to bask in the comforting notion that air-ground cooperation in the past was all that we might desire in the future. If the next war is to be fought under the same conditions, perhaps that might be so. But we are faced with weapons and explosives whose power is magnified many times over those of 1944-5. Fighting on a road will become very costly, even granting that the hostile air force has been overcome in the early days of combat and there is little to fear from enemy air action. It seems as certain as anything that can be foretold that a premium will be placed on dispersion and mobility.

Dispersion and mobility directly affect the control problem. And unless tactical control is of a superior order, the prospect of successful air strikes is dim indeed. Therefore there is no time like the present to perfect air-ground technique.

Both in the training period of World War II and in combat itself a good many devices were contrived to simplify the aerial identification of ground targets. The simplest was of course that of designating an objective by means of map grid coordinates, with final identification of the target itself left to the airman. When this proved generally inadequate the target was pointed out to the pilot by the radio operator of the air-ground party by reference to prominent landmarks—or the target could be outlined by colored smoke bursts from artillery, tank cannon or mortars.

It must be admitted that these and other devices for identification were not all that could be desired. The maps were not quite good enough, and the smoke and artillery bursts dissipated quickly even when they were accurate enough to outline the target.

The tactical air pilot in the ETO covered hundreds of miles of front. The simple laws of supply and demand and economy of force required the air squadrons to be rigidly controlled by radio so that they could be

dispatched on a few moments notice to any division that required their aid. They were like a city fire department in that they could not be everywhere at once in anticipation of a fire breaking out. But unlike the fire department they did not stay in the engine house. The demand was always great enough to require a mission somewhere, and always a move to another critical area as soon as the first mission was accomplished.

Contrast this setup with the war in the Pacific. There the conflict was comparatively localized—an attack on an island or a beachhead. The air support took off from a carrier or a nearby base and then flew in a circle or "orbit" in the area of battle until an air strike was called for by the ground troops.

Nevertheless, once army tactical air arrives in an area on call, the conditions are then similar to those which confront Navy or Marine air "on orbit" at least until their immediate mission is completed. However, in the ETO, tactical air habitually arrived in a division area by using a map of a scale approximating 1/300,000. This scale was not much use when it came to identifying ground targets, unless the troops supported were in a column on a road, making conditions quite different from those in the Pacific Islands.

Even when using maps of a scale appropriate to conditions, the ETO pilot patrolling the front of one or more Armies sometimes occupied a cockpit which had the appearance of a receptacle for the Sunday editions of all New York newspapers.

The solution of the problem of maps is not difficult. A pilot must have a small scale map which shows a lot of country and which enables him to leave his home base and reach the areas of one or more divisions he is scheduled to support. On arrival he must have a much larger scale map which gives in detail the landmarks in the zone of action of each division.

Air and Armor coördinate on Luzon during the late war.

The command and staff of the divisions go to great trouble (or should do so at any rate) to mark probable artillery concentrations over points that might be occupied by the enemy along the route or zone of advance of the division for each succeeding day. These points, or concentrations are numbered and the marked maps distributed to key commanders and artillery commanders and observers. When enemy resistance is located it is only necessary to call for the appropriate numbered concentration or for a concentration by reference thereto.

In the ETO there were entirely too few divisions which took the trouble to do the same thing, with the obvious modifications, for air support. Yet it is every bit as important.

In performing the same task for the air support units the division staff of the future should bear in mind the physical problems of the squadron leader or the pilot commanding whatever air unit is designated. He is encased in a tiny cockpit, he has already a map which takes up a great deal of room and which is of use only in reaching the division area, and he will be travelling in the future at speeds much greater than those of World War II. The least that can be done for him by the division staff is to provide him with a map of the division zone of action, mounted on a board about 18 inches square and prominently marked with the code name of the division. If the division operations map cannot be accommodated on the 18-inch square board, then two or more sections so mounted should be provided.

The pilot simply puts the maps in a convenient rack in the cockpit and when called navigates from base to the division area with his regular air map. In the event that the call has come from the Umpteenth Division whose call sign is DOGFACE and whose air operations maps have been mounted and taken to Headquarters of Tactical Air the previous night, he pulls out the DOGFACE board as soon as he reaches the area and studies it for landmarks. If there is more than one map for DOGFACE the call will be made for DOGFACE ONE or DOGFACE TWO, etc.

At this point the pilot is moving at terrific speed and may be subject to AA fire from enemy ground positions. He wants to perform his mission and get out as fast as he can. The division staff can help him do this by marking the potential air strikes in accordance with the layout of the most prominent ground landmarks. If possible a half dozen points should be selected and lightly covered over in red as well as being numbered or lettered. The other potential air strikes are numbered in hundreds.

In calling for an air strike the ground unit simply asks, through the air support party, for B-126, for ex-

ample. The pilot glances at his board at the red-shaded B landmark, identifies it on the ground and then picks up the 126 strike which will of course be nearby. Strikes called on points which have not been previously selected naturally are more trouble but can be identified by reference to one of the selected strikes.

This device is obviously just something to enable a pilot to pick up a target quickly in a fast plane which is subject to AA fire. Conditions may be a bit different and may warrant the designation of a strike by coordinate methods.

Navy air has used a very simple coordinate system which might well be taken over by our ground troops where enemy air and AA are relatively inactive. This involves only the numbering of each 1000 yard (or meter) grid square on the map from left to right and top to bottom. Each grid square is further subdivided into twenty-five squares which are lettered from left to right and top to bottom. Thus, 125-Easy would be a 200-yard square in the upper right hand corner of main grid No. 125; 156-Mike would be a 200-yard square in the center of the main grid No. 156, etc. For security's sake a different numbering scheme could be used on successive days such as using only odd or even numbers, multiples of 5 and so on.

However, the Navy does not depend on the chance that a squadron leader may fly over the target area at 400 miles an hour or better and promptly pick up a spot on the ground, whether his map shows red, black or blue shading. The Navy recognizes the need for a middleman in the operation, one who is himself in the air and who is in radio contact with the incoming fighters and with the air-support parties on the ground.

Much of the system of operation of this individual, whom the Navy calls an "Air Coordinator" involves classified material and will not be discussed here. What we shall do, however, is to speak of the air support of Armor when it is operating on a broad front and suggest what might be done to give a better means of coordinating the airman's ability to pick up a target designated by the ground troops. The suggestions made are not necessarily based on the details of the Navy system since the writer is actually unfamiliar with those details.

In World War II, as we have seen, in spite of all that was done with colored smoke, prepared maps and the like, the conditions which faced the average pilot were not conducive to his immediate identification of the target selected, at least in the ETO. That the great majority did in fact ultimately hit their target was simply a tribute to the skill and courage of our Air Forces. Now we are proposing to require the same or better accuracy with the added handicap of faster airplanes.

The presence of an intermediary airman such as described by the Navy term "Air Coordinator" seems an obvious essential. We visualize an Air Coordinator as a member of what might be called the "Air Coordinating Detachment" and which in turn is part of the regular Tables of Organization of a Division, or, preferably an Army Corps.

The Air Support Officer of the 6th Armored Division checks a map during Third Army Operations in France in 1944.

The Air Coordinating Detachment should have sufficient matériel and personnel to keep at least one airplane and crew aloft during the entire time that the Corps is operating. This plane should be capable of operating two radio nets simultaneously—the air-ground net of the unit supported and the net in which the supporting aircraft will be operating.

The speed and ceiling characteristics of this plane, as well as its armament, are properly the concern of the Air Forces. The ground units would expect suitable characteristics consistent with its ability to cruise in the area of operations and to identify readily all landmarks and potential air strikes designated by the ground troops. It should also be fast enough to lead, when necessary, fighter aircraft directly to the designated target.

The duties of the Air Coordinating Detachment are seen as those of assisting the Corps or Division Air Officers, or the counterpart of G-3 Air, in an advisory capacity during the planning stages of an operation, and later exercising actual supervision over the sifting of air requests during action and over the execution of air strikes.

Nothing in a setup of this kind changes the present system of air parties working with the different echelons of ground troops, any more than there is a need for a change in the operations of artillery forward observers. The air parties should continue to be attached to Combat Commands or even lower units and to transmit their needs to the Air Coordinating Detachment.

However, control over air support in armored divisions has probably been, and will be more centralized than that necessary for infantry in the past. In almost every situation the Combat Command Commander or

his staff is in constant touch with units in contact with the enemy. When a need for air support arises he is immediately aware of it and can take action personally through the air party which accompanies his headquarters. In Infantry units, troops tend to get beyond control more frequently, communications suffer and a need for air can arise which even a regimental commander is unable to oversee.

In past practice an air request by an armored unit could be made over the command net to the Combat Command where it could be immediately relayed by the VHF radio of the air-support party to planes in flight, or, through the air support personnel at Division headquarters to the aircraft base. All of the air support personnel have in the past been Air Force men, and should continue to be in the future. They were usually pilots who took two weeks off flying duty for the purpose and were thus thoroughly familiar with both the air and ground requirements.

The Air Coordinating Detachment will simplify the task of the air support parties to a considerable degree. In the first place the Detachment Commander should require divisions which he serves to prepare air strike plans and air strike maps which, when proficiency has been attained can be taken directly to the Air Base from whence will come the aircraft which are to support the operation.

The Air Coordinating Detachment then should provide air reconnaissance of the area which will permit an identification of potential ground targets prior to or as soon as possible after the commencement of operations. Once action has begun the Detachment keeps a plane in the air as long as requests for air support are a possibility.

Air support parties transmit all requests to the Coordinator, who is on station in this plane. There should be no contact between the ground parties and the combat aircraft whatever, although if radio contact with the Coordinating plane is lost, there is the obvious recourse of going through the command nets for a relay.

The Coordinator in the plane then calls the base, or contacts aircraft in the air to execute one or more strikes as called for. When support aircraft appear in the area the Coordinator immediately takes control of them through the assigned radio net. Probably he will have them fly on orbit at a point well beyond the range of hostile AA batteries while he has the air unit leader accompany him forward to a point where the potential targets can be identified. Once targets are identified, ground troops are notified to prepare for the air strike so that advantage can be taken of it. Possibly artillery may be asked to fire a concentration to protect the aircraft as they are coming in. But the Coordinator does not blindly direct as squadron here or there. He judges just how many of what type airplanes are needed to execute a particular strike and thus may divide a squadron into two or three missions which under the old system would have been able to carry out only the principal mission called for by a division at any given time.

Moreover, in situations where enemy air is active the Coordinator may divert all or part of the support aircraft available to the attack of hostile craft. Further, he is able from his position aloft, to judge better which of the potential air targets are more properly to be handled by artillery fire rather than by air.

After the execution of the strikes planes return to their orbit until released by the Coordinator.

This system obviously permits much greater economy of force in the use of combat aircraft, much better selection and identification of targets, and better control over aircraft operating in the area, particularly as to the timing of their attacks in conjunction with movement on the ground.

It is possible that the Air Coordinating Detachment might be made up of other than Air Force personnel. Improvement in radio facilities might permit the use of L-type planes on duty of this kind. However, there will be trouble in finding substitutes for the necessary combat aircraft experience which it is evident that personnel on coordinating duty should have. Likewise, the need of occasionally leading the attacking force to the target might preclude the use of light planes.

This discussion summarizes very simply. It is plain that our present ideas of air-ground cooperation are sound. It is also evident that improvement is needed in the field of selection and identification of suitable air targets and in the control of aircraft operating over ground troops.

The ground troops can help the airmen by the provision of carefully thought out plans, drawn up with a knowledge of air capabilities and in conjunction with the advice of air officers. Staffs can provide the pilots with maps of the area, on a scale suitable for local use and marked with potential targets.

But the provision of an individual or a unit to carry out the duties described above for the Air Coordinating Detachment, and based in general on the Navy idea is advanced here as the greatest contribution which can be made for the perfection of the air-ground technique of the future.

A subscription to the Journal would make an excellent Christmas Gift.

EDITORIALS

And Again . . . New Editor

It appears that editors are practically a dime a dozen these days, for effective with the release of this issue another change in the JOURNAL masthead will take place. At the time of taking office your present editor planned to be with the magazine for an extended period. However, family health has forced a change in scene and thus the chair is relinquished at the very time when things were getting interesting.

The new JOURNAL editorial policy is unquestionably popular if we are to judge by the amount of laudatory mail and the absence of brickbats. Some people even like the contents. We admit all this because there is no need to take any credit when the market is flooded with highly readable material from authors who know, or at least ought to know their business.

We have completed an organization in the field whereby unit representatives have undertaken to canvass their areas for new subscriptions, for articles and for opinions as to how improvements in the JOURNAL can be made. Needless to say the subscription campaign is barely begun. We need 1,000 to 2,000 new readers, and quickly. But there is room for encouragement when one sees the awakening of interest in areas such as Los Angeles where live wire Reserve officers of the caliber of Colonel J. T. Roberts (commanding the 13th Armored Division) are beating the woods. We hope ultimately for 1,000 subscriptions from the Los Angeles area alone.

Colonel Claude O. Burch, Cavalry, now takes over the editor's chair. He brings to JOURNAL readers a wide and long experience with Armored Cavalry dating from the earliest days at Fort Knox. His easy and friendly personality will be welcomed in the editorials, reconnoitering, and in other pages where the staff can make their presence felt.

We wish to thank all subscribers, readers and commanders, in addition to the Staff of the Armored Center and Armored School, whose ready and generous response to appeals for aid have shown fine results in the subscription lists. And hearty thanks and good luck to the JOURNAL staff for a future which grows more promising day by day.

Season's Greetings

Our bimonthly status puts us out a bit after Thanksgiving, while Christmas and the New Year fall exactly between our last issue of this year and the first one of the coming year.

We take this opportunity to extend the Season's Greetings to all members of the Armed Forces, to the members of our Association, and to our many friends everywhere.

The Annual Meeting of the U. S. Armored Cavalry Association will be held at 8 P. M. on Monday, 17—Jan. 1949, at the Army-Navy Club in Washington, D. C. Officers will be elected for the coming year and such business as may properly come before the meeting will be transacted. All members are urged to attend. The regular notice will go out to all members. Please send in the return card letting us know if you will or will not be there.

Fear of War

Three years ago last May we met the Russians. And what hotcha! The embracings, the dancing, the naz darovia! We can even recall some dancing babes from the Caucasus in the 69th Guards (now there's a Table of Organization for you) who didn't seem too obsessed with saying "Nyet."

One memory stands out of all contacts with Russian troops. Patriotism to the *n*th degree. To see a thousand Russian soldiers singing their wonderful harmonies of valorous deeds and of devotion to Stalin is as inspirational as hearing the crashing chords. It is very obvious indeed that Mother Russia is deep in the soul of every last rank in the Red Army.

We remember the Russian admiration for power and their contempt for weakness in their own ranks, as shown by their feelings toward returned prisoners of war. We recall the petulance which greeted our refusal to trade our Ford convertible for a Lincoln limousine.

All this adds up to our conviction that the present expansion of the Army is something that our Russian friends will admire and understand as the best gesture of peace we could make. It will go far toward overcoming the headlines of a few months ago which stressed fear. Fear of a dozen things, but essentially a fear that we would have to fight.

We have nothing to fear in a military sense except our own moral weakness. The Army which swept over Europe was the smartest and most efficient military machine the world has ever seen. It was something that the Russian common soldier could respect and admire. He did respect and admire it with the utmost friendliness until the strength was dissipated.

Let us despise war and avoid it by every possible honorable device. But let us not fear war, for to fear it in this case will be to invite it. Let us instead re-create a reasonable fraction of the forces of '45 which will give us the quiet confidence which in turn makes a spirit of patience and firmness possible. A nation which is so foolish as not to do this does not deserve the friendship of the Russian soldier, and you can bet your last pound of beluga caviar he will not give it.

OUR MISSIONS

The U.S. Military Mission In Turkey

by Major General Horace L. McBride

Early this past spring we set ourselves the task of bringing the readers of the Journal the story of our aid and ground missions engaged in the important work of assisting friendly nations. Now, many months later, we have overcome the obstacles of contact, mail schedules and appropriate clearances, and we are able to offer the first of a series. General McBride, Chief of the Military Group of the Mission, gives us the story of one of our key activities in the implementation of the Truman Doctrine.

FOR centuries the strategic importance of the area within the present boundaries of Turkey has been recognized. At no period of history has this area been of as much interest and concern to the United States as it is today. A Moslem nation, a stabilizing force in the Middle East, lying astride the vital waterway from the Black Sea to the Mediterranean, flanking the routes from Russia southwest through the Balkans and southward to the important oil fields of the Persian Gulf region, a neighbor of Palestine, and having common boundaries with both Russia and the Russian Satellite Bulgaria, Turkey has a political as well as a military importance to America never before approached in Turko-American relations.

The chief interest of the United States in Turkey is the maintenance of that country's position as a free and independent nation. Since the modernization of Turkey's armed forces was considered to be the best means to that end, the Congress of the United States in an Act approved 22 May 1947 authorized the President of the United States to furnish assistance to Turkey in the amount of one hundred million dollars. A survey group of military and civilian experts was sent to Turkey in May 1947 to confer with the American Ambassador and the Turkish authorities and to make the assistance most effective. In consultation with the Turkish authorities it was agreed that the bulk of the appropriation was to be used to provide modern military supplies and equipment for the Turkish armed forces. Five million dollars was allotted for the improvement of the strategic highways and the United States Public Roads Administration was subsequently charged with its administration.

The survey group returned to the United States in July of 1947 and submitted their report and recommendations. The organization of a military mission to carry out the aid program was started in Washington early in August. The military mission consists of three groups: Army, Navy and Air Force. The Chief of the Army Group, as senior of the military officers, was designated as coordinator of the military groups. The first task of the groups was to prepare detailed lists of equipment and supplies based on the report of the survey group. Careful planning extending over several months was necessary to achieve the most efficient expenditure of funds. The multiple task of providing supplies and equipment in a program limited in dollars, taking every precaution to insure that the program is balanced to the extent that it gives the greatest benefit to Turkey, and at the same time striving to make the most economical use of surplus military stocks, requires numerous revisions and substitutions. Non-availability of a desired item from surplus stocks requires the substitution of an acceptable similar item which in turn requires a change of other dependent or related items in order to insure a balanced, integrated program. An acceptable list of requirements, approved in November 1947, was designed to make the maximum contribution to the defensive power of the Turkish armed forces.

Recruiting civilian and military personnel for the mission was initiated in August and the first members of the mission were en route to Turkey in September. The advance party in Turkey immediately commenced preparations for the reception and storage of equipment and supplies. The first shipment arrived in October. Concurrently, plans were formulated for the instruction of Turkish personnel in maintenance and operation of American equipment, much of which was new to the Turkish forces.

It was necessary to establish courses for instruction of Turkish personnel in technical maintenance and operation of the aid equipment prior to release of the equipment to Turkish military units. The objective of these courses is to train Turkish instructors who can return to the units receiving the new American equipment and in turn conduct unit schools.

Language difficulty increased tremendously the burden of work. It was necessary to assemble English-speaking interpreters, translators, typists, and draftsmen to translate American field manuals and technical

regulations, and to prepare instruction programs and lesson plans in Turkish for each. The lack of a technical dictionary in Turkish made it extremely difficult for translators to agree on uniform Turkish terms for technical words new to the Turkish language. Training of depot personnel presented a major problem. Packing lists in English on each box had to be translated into Turkish, and warehouse personnel were then confronted with the problem of matching a piece of equipment which was new to them with a Turkish term which was also unfamiliar. Fortunately, there are a number of Turkish officers, mostly reserves, who are graduates of American civilian engineering and technical colleges, as well as a smaller number of regular officers who are graduates of American army service schools. These English-speaking, American-trained officers have been invaluable in assisting the mission in the instructional work; without them the task would have been immeasurably more difficult.

It was apparent from the outset that the American courses of instruction must be centralized in order to utilize effectively the limited number of American instructors available. The courses were opened at existing Turkish army schools. Superimposing these courses on the resident courses of the schools was an additional burden on the school facilities. Turkish authorities recognize the need for a complete revision and expansion of their military school system and have agreed to reorganize their schools in conformity with the system employed by the American military schools. Plans prepared by the American Mission to effect this change have been accepted by the Turks. This involves basic changes in curricula at all schools, reorganization and expansion of school staffs and faculty, and an extensive construction program at each school.

It was soon recognized that technical instruction alone would not meet the needs of the Turkish forces. During World War II, Turk officers had little opportunity to observe and keep abreast of tactical and combat developments. Consequently, if the Turks were to get maximum benefit from the modern equipment they received, it was obvious that American-supervised tactical instruction should be initiated in their army schools. Arrangements have been completed to integrate this type of instruction into the 1948-1949 school program. It is expected that the Turks will be able to assume the bulk of the instructional load for the 1949-1950 courses. Every effort is being made to establish a modern training and educational program which can be carried forward by the Turks when the American Mission is finally withdrawn.

Although there have been and still remain major problems to be solved before the objectives of the Military Mission can be accomplished, the results achieved to date have been extremely encouraging. The cooperation of the Turkish authorities is sincere and wholehearted. Their spirit, determination and interest leave little to be desired. Turkish public opinion continues to manifest interest in the American Aid program and increased confidence in the Turkish Armed Forces. The Prime Minister has publicly expressed appreciation for the help and facilities being extended by the United States. As evidence of the continuing interest of the American people in guaranteeing the national integrity of Turkey and improving the capabilities of the Turkish military establishment the American Congress in April 1948 authorized an additional appropriation to extend the aid program during the next fiscal year.

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Following tours as Assistant Military Attache to Holland and Poland, General McBride returned to the States for duty which included the Advanced Course at the Field Artillery School at Fort Sill, PMS&T at Yale University, and back again as instructor at Sill. He attended the Army War College in 1935-36, and upon graduation became instructor at the Command and General Staff College.

General McBride took command of the 80th Infantry Division in its training period in the States, and led the division through the combat period across Europe. He moved on to command of XX Corps and the 9th Division in the occupation period, returning to the ZI in early 1947. With the implementation of the Truman Doctrine he terminated a brief tour as Commanding General of the First Service Command to become the Chief of the American Military Mission to Turkey.

Command and Communication

by Major Ralph E. Kuzell

The Staff of the *Journal* considers this one of the most important and notable contributions received in recent years. The author has given a logical presentation, carefully documented historically, of what is undoubtedly the most important subject confronting the leaders of Armored forces. Its importance will be further enhanced on the battlefields of tomorrow, where improved explosives force greater dispersion and where greater dispersion demands improved control.

IN a proper study of military history, it is not sufficient to memorize a number of dead facts. They may be interesting, but the advantage gained from such knowledge is solely cultural and not at all military. Nor is it sufficient to study only the strategy and the battlefield tactics. They are the most interesting subjects, and are the most often discussed in books, but they are by no means the only important ones. Students of military history should learn what brought about the results." In a study and determination of the decisive factors in many important battles it is strikingly significant that the means of communication available to the commanders, as well as their use of these communication facilities, often decided not only the outcome of the battle but established the strategy and tactics of the day.

A leader's capability as a commander is definitely limited by his skill in determining a basis for action and his ability to transmit to his subordinates his orders for implementing his plan. He must be able to decide what is best and he must be able to act. In deciding what is best, the commander must possess the maximum of information about the enemy and his own troops that science, discipline, and training will allow. Only when satisfied that he possesses all information available under the circumstances, will he be able to make a sound decision. In order to obtain this information, the commander must have a reliable system of communication, a system capable of operation under adverse conditions and capable of keeping abreast of the timing of his attack or of operating efficiently in spite of the disruption and chaos created by a rapid, powerful enemy attack. If the leader is to command his troops, if he is to transmit his decision, if he is to implement and supervise the execution of his plan, and if he is to handle his reserves in a manner that will be favorable to him; in short, if he is to control the battlefield, he must possess a system of communication that will transmit his orders in a timely and secure manner to his subordinates. He must control a system of communication that will provide instant warning of an enemy attack or counterattack, of an enemy withdrawal, or of a change in the enemy action which may affect his mission. He must be capable of instantaneous communication with his reserve so that he can commit it to take advantage of the situation as he knows it. A brief review of military history will serve to illustrate the influence of communication on strategy and tactics as well as its profound effect in determining the efficacy of command.

During the period from the beginning of authentic history to the wars between the Greeks and Persians and even for years thereafter, commanders did not hold out reserves to meet emergencies. Dispositions were determined and the outcome of most battles was decided before the troops were joined in combat. The successful commander placed his troops in formations designed to be most effective based on the intelligence he had developed concerning the enemy prior to the battle. Troops were instructed to operate in accordance with a preconceived plan and, once the actual battle had begun, the commander had practically no way of influencing the outcome if the enemy failed to develop according to expectations. To be sure, Alexander understood the value of reserves and frequently disposed his troops with provisions for reserves, but their use had always been predetermined by the dispositions of the enemy, and the reserves could not be controlled to meet an unforeseen emergency. Had ancient warriors understood the potentialities of communication in control, the value of training messengers and liaison officers, the use of visual and sound signals, they would have increased immeasurably the combat capabilities of their troops. It was not until much later, however, that the significance of these means of communication was understood.

Development of arms, machines of war, and the adaptation of transport to the soldier's needs have all had a marked effect on warfare. Warriors first fought in closely knit groups, and victory was determined primarily by physical strength and numerical superiority. It was found that certain formations were adapted to particular weapons, and as these weapons of war were perfected it was discovered that weapons of propulsion, such as bows and arrows and firearms, were most ef-

ficiently used in open formations. Variations in formations, however, demanded additional control measures, the first of which were rank and command. Along with the need for rank and command came the need for means of communication. As the slower more unwieldly formations succumbed to mobility and firepower, the need for improved methods of communication increased, and indeed determined, the ease with which the transformation to mobile warfare could be made. The transition from the use of crude methods of visual and audible signals to modern radio and telephone was long and difficult, and fraught with many hard-earned lessons for military commanders who failed to properly understand the value of good communication.

Hannibal, one of the greatest commanders of all time, won his famous victory at Cannae through superb handling of his troops. Yet Hannibal's control was based primarily on the dispositions of the enemy before the battle and the enemy's lack of mobility, not upon a superior system of communication in Hannibal's army. In fact, not long after Cannae, Hannibal suffered a crushing defeat that can be attributed primarily to poor communication.

> Hannibal was at Canusium, near Cannae, awaiting news from his brother (Hasdrubal), when a group of six messengers sent by Hasdrubal were captured by the Romans. They bore Hasdrubal's complete plan of operations, calling for a junction of the two Carthagenian forces near Narnia.
>
> The consul, Caius Claudius Nero, one of the most alert Roman generals, was commanding the army facing Hannibal at Canusium. When he received Hasdrubal's message, he at once made plans to prevent the junction of the brothers. Leaving the bulk of his army in front of Hannibal, he marched with 6000 foot and 1000 horse to join Livius, the other consul, who was facing Hasdrubal south of the Metarus River. Hannibal was kept in complete ignorance, not only of his brother's movements, but of Nero's departure to intercept him. . . .
>
> Nero sent messages ahead to Livius, and was received so secretly in the camp of Livius that Hasdrubal knew as little of his arrival as Hannibal did of his departure, although the two armies were encamped only half a mile apart. . . .
>
> Practically the whole Carthagenian army was killed or captured. The Roman loss was about 8,000. Cannae was avenged, and Hannibal's last chance of conquering Italy was gone. . . .
>
> Creasy places the Metarus as one of fifteen decisive battles of the world. Had Hasdrubal won, it is possible that Hannibal would have conquered Rome, and destroyed it, as Rome later destroyed Carthage.[1]

The Romans with their well-trained, mobile legions dominated their enemies for centuries. With the advent of cavalry, however, mobility was an even more significant factor, which was not fully apparent until the eleventh century when the European world was startled by the Mongol invasion of Hungary, a striking example of open lightning-like warfare made possible by superior command control. Indeed, we may see in Mongol strategy the precursor of the armored blitzkrieg of World War II. European methods of combat did not apply to the rapidly moving, well-coordinated Mongol forces. The Mongols advanced against the European stronghold in three widely separated field armies, their right flank protected by a covering force which moved rapidly and with unbelievable success against numerically superior enemy formations. The Mongol armies were quickly concentrated on the Danube near Gran, and after a retrograde movement, conducted in a manner which has not since been duplicated from the standpoint of control, crossed the Sajo River in the face of the enemy, and enveloped the Hungarian army in a battle of annihilation, leaving 70,000 dead on the field.

Although we know little of the Mongol means of communication, the control and synchronization of the movements of their armies, which was evident in their campaigns, can be attributed to superior use of liaison officers and mounted couriers. Tactical control on the battlefield was obtained through the use of signal flags, which obviated delay necessitated in transmission of verbal or written messages and orders. Indeed, it is not likely that many of the Mongol officers could read or write.

With the development of printing in Europe, however, the general level of education was improved, and officers learned to read and write. Written orders were therefore more practical, and the military staff was no longer limited to liaison. During the Napoleonic Era, the semaphore was used in conjunction with mounted messengers and liaison officers. Napoleon himself, nevertheless, failed to perfect adequate control due to

[1]William A. Mitchell, *Outlines of the World's Military History* p. 97.

ABOUT THE AUTHOR

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lack of a good staff system with communications support. Faulty control and poor communication contributed to Napoleon's downfall at Waterloo even though he had personally made a sound estimate of the enemy situation and decided on a plan that would have defeated the enemy if properly executed.

On June 16, 1815, Napoleon launched an attack on Ligny against the forces of Blucher, who in attempting to envelop the French left had weakened the center of his line. Napoleon saw this mistake of his opponent and prepared an assault on the enemy center. Napoleon had detached D'Erlon's corps from Ney's force, which was advancing toward Brussels; and Napoleon waited for D'Erlon before launching the attack on Blucher's center. D'Erlon's corps did not arrive, however, so Napoleon attacked without it and drove Blucher from his positions, but was unable to press his advantage by following up Blucher's troops. As a result Blucher was able to retire and re-form his army. Analysis shows that Marshal Ney, who was making the secondary effort, had met increasing pressure and was about to reinforce with D'Erlon's corps when he discovered that a liaison officer from Napoleon had ordered D'Erlon to Ligny without informing Ney. Ney quickly ordered the return of the corps. The result was several miles of marching and countermarching for D'Erlon's corps which did not participate in the battle. The fact that the Prussians under Blucher were not routed by Napoleon made it possible for them to play a decisive part in his defeat at Waterloo on the 18th. Had Napoleon been able through an adequate system of communication to commit D'Erlon's corps at the critical time, he might have routed the Prussians and eliminated them permanently. Even though Napoleon through extreme personal exertion was able to observe the conduct of the battle and determine the point of decisive action, he was not able to carry his plans to a conclusion for he did not possess adequate control. A well organized staff supported by reliable communication might have saved him from defeat.

Lack of a satisfactory staff system was again evident in the plight of the Mexican Army, which during our campaign of 1847 had no organized staff or systematic means of intercommunication. Even though fighting on familiar soil, the Mexicans were unable to bring their superiority in manpower to bear at the critical time and place.

Prior to the American Civil War, the possibilities of military communication had been explored and developed by Lieutenant Meyer of the Army Medical Department, but little interest had been taken in his inventions. Moreover, the military implications of the development of the telegraph were not understood by military commanders generally. The changes in tactics during the American Civil War, however, were significant of the adaptation of these new means of control to military use as the war continued. By the end of the war the telegraph was used extensively, but required permanent type installations and presented problems in installation and extension which prohibited its use as a means of control with rapidly moving troops. The Meyer signal system, which involved transmission of code by flags and torches was used first by the Confederates and later by the Federal troops. By the end of the war, this method of visual signalling, as well as the telegraph, was in widespread use. However, since staff organization depended upon the whim of the commander, the most effective use was not made of these excellent means of communication for rapid transmission of information and orders. As a result commanders, with the exception of Grant and Jackson who were able to visualize enemy weakness and disregard their own, continued to be perplexed by their own disorganization while failing to discover the enemy's weakness. This is illustrated by Ewell's failure to take Cemetery Hill at Gettysburg because he waited for his rear division over which he had no firm control. Although his own forces were disorganized, the Union forces were far more disorganized, and he could have won the battle of Gettysburg had he been able to exercise better control over his divisions through proper use of the means of communication available.

During the Civil War, nevertheless, new methods of communication, while not developed to the maximum, did lend strength particularly to the defensive. Hasty field fortifications were used extensively by both the Northern and Southern forces. The forces under Lee at Richmond were particularly adept at the technique of throwing up hasty entrenchments and holding them lightly, warding off attempts at penetration and envelopment through the rapid movement of local and general reserves. Communication was adequate for the defender and enabled him to commit reserves as desired. The attacker possessed no means of disrupting communication within the battle position; the artillery used was relatively ineffective in this respect and quantities of ammunition consumed were small. The defender was able to maintain tactical unity within the battle position through verbal transmission of orders and instructions in the small units and the use of messengers, liaison, and visual signals within the battalion. The telegraph, visual signals, liaison, and messengers established control and coordination of battalions and larger units and permitted the employment of general reserves. The attacker, on the other hand, was plagued with the inability of communication to keep up with attacking troops in large formations. The trend toward stabilization of warfare was definitely established and foreshadowed the conditions which were to exist during World War I.

Although the telephone had been invented before our participation in the Spanish American War, we must look to the Russians for the military application of its use and the resultant additional strengthening of the defensive. During the Russo-Japanese War, the Russians adapted the telephone to use in front-line defensive units. Here again, as in the American Civil War, we see the communication lag on the offensive. The

Russians were unable to adapt the telephone to offensive usage, but employed instead a system of flags to point out positions of advancing troops, and in the lower echelons, markers were affixed to the backs of attacking men to indicate their positions.

During World War I, Russian developments in the use of the telephone were generally adopted. The general staff system which had been developed during the Franco-German War by Von Moltke, who incorporated the principles of Scharnhorst, provided a workable means for exercising command of large bodies of troops and was used in all large headquarters. Under staff control, telegraphic traffic was enormous, and radio made great strides, but was generally used only between large headquarters. Although the status of communication as a means of control had increased immensely, installations were still cumbersome and adapted to static or slowly moving situations. Only short advances could be supported, and rapid coordinated movements of large armies against enemy opposition were out of the question.

Open warfare in the west was effectively terminated in the Battle of the Marne. Moltke, in failing to follow the Schlieffen Plan, weakened his right flank and was, therefore, unable to envelop the Allied left as planned. Quite significant, as well, in his failure was the inability of the Germans to maintain liaison and contact between their armies as their weakened right met increasing enemy pressure. This was evidence of failure to adapt communications to mobile warfare; it was reminiscent of the age-old tendency to base control on planning designed to overcome initial enemy dispositions, but inflexible and unable to adjust to the unexpected. It foreshadowed the stalemate on the western front.

As World War II opened with the German war machine rolling through France and the Lowlands, the world was startled by the speed of the attack and the ease with which well-prepared defensive positions were overrun. This time, however, the German forces in the west were strong enough for their task; they had not been weakened as Von Moltke had weakened his right wing before his ill-fated advance to the Marne. The bold movements of the invading columns, their coordination, their timing and magnificent power at the critical points were reminiscent of the Mongol invasion of Hungary. The German success, upon analysis, was not all that it appeared to be. The German General Staff had perfected victory based on an undreamed of detail in planning, but therein lay their weakness. This weakness was not to become fatal until the battle of Stalingrad, nor was it to be really evident until we swept across France from the beaches of Normandy.

Although the Germans had made progress in the development of communication, control of their forces was due more to adherence to planned timetables, discipline, and the use of conventional means of communication than the adaptation of radio to synchronization of the air, tank, infantry, artillery team. As long as battles progressed as planned, the German commanders in the field were able to bring their strength to bear decisively. With the first strong blows of adversity, however, on the Eastern front where timetables had not been worked out so accurately, the dreaded German war machine lost the initiative for that short but fateful period which determined the difference between open warfare and siege warfare. At Stalingrad the Russians exhibited a tenacity that seems remarkable, but which upon analysis is really quite simple when we consider the weakness of communication within and between the German divisions and the fortuitous position of the Russians. With unexpected reversals, German field commanders were not able to regroup rapidly enough to prevent the Russians from stabilizing the front, while from the Russian standpoint, adversity had finally been blessed with makeshift communications which were able to withstand even the heavy shelling of modern warfare.

Urban wire installations adapted to military needs were generally proof against the German onslaught for two reasons:

1. German lines of communication were overextended, and with adverse weather conditions supply of artillery ammunition was at its best meager, while support by aerial bombardment had been crippled.
2. Whereas wire systems had heretofore been generally of the field type, installations at Stalingrad were protected and in many instances underground. Runners were shielded by buildings and rubble.

The Russians with their communication were able to mass effectively their heavy artillery, which devastated the attacking formations and provided the defensive with a truly irresistible strength.

Once the German fortress had been breached in Normandy, the German weakness in communication and control, evident at Stalingrad, was nakedly revealed, but unfortunately generally misunderstood. Herein lay the seed for the stunned plight of our own troops in December of 1944 when the Germans struck terror into the hearts of the Allies. After the breakout in Normandy, our troops, spearheaded by armor, moved violently to exploit enemy confusion and spread chaos across western Europe as they advanced with incredible speed.

Why was the proud German army which had itself swept over Europe in 1940 unable to stem this avalanche? Many people have attributed the inability of the Germans to counter our movements to the great Allied air superiority which enabled us to blast German rear areas and routes of communication, thereby prohibiting concentration of ground troops. It is utterly fantastic to believe that such is the case. To be sure, our air attacks were decisive, but in a different manner indeed. Air attacks, together with extremely heavy concentrations of field artillery initially reinforced by naval bombardment, so effectively cut the enemy wire com-

munication systems in forward areas that he was stunned and unable to react. He failed initially to strike our beachhead in strength even though it is known that several divisions were available, and he was actually unable to intercept the movement of our armor across France until we halted for consolidation. It is sheer naivete to believe that air power virtually alone and by its interdiction of roads and canals and the destruction of bridges and railroads prevented the Germans from resisting our advance or properly withdrawing their forces. A modern army is not limited to roads nor is it impeded by blown bridges, and it certainly is not dependent on railroads and canals for effective withdrawal. The loss of all these facilities affected the enemy seriously, but the difficulties presented were not insurmountable. The German was confused. His units in contact failed to provide the necessary combat intelligence, and he did not know the locations of his own divisional troops—his communications were inadequate.

On the other hand, our own advance would never have been possible without direction and coordination. Our methods differed somewhat from those used by the Germans in the invasion of France in 1940. Although our plans for the initial amphibious assault were extremely detailed, their execution involved intricate systems of communication. Our later plans were based on battlefield developments, and the resulting combat intelligence. After the breakout planning was necessarily abbreviated and dissemination of orders rapid. The development of intelligence and the direction of troops is not possible in a rapidly moving situation without effective communication. Communication was the key to the success of our advance. Radio and radio relay provided the flexible system of information and control so necessary to the commanders in the field. Radio relay carried great volumes of traffic with an astonishingly low demand on personnel and with a minimum of logistical support.

> The great advantage of radio relay over wire circuits which could carry equivalent traffic is shown best by figures. Material for a 100-mile wire line with four wires weighs ninety-four ship tons, whereas radio relay for that distance weighs only twenty-five ship tons. The construction of such a wire line would take four battalions, or 1,820 men ten days, while forty-four men can install the equivalent radio relay and put it into operation in two days or less. Moreover, after the wire line has been constructed every foot of it is vulnerable to bombing, sabotage, demolition, accidents from vehicles; even buried cables were cut by bulldozers, graders, etc., whereas a radio relay system is subject to trouble at only the two terminal stations and the two or three relay stations and there are always alert men at each of these points to prevent or to correct immediately any interruption.[2]

[2]Major General W. S. Rumbough, "Radio Relay, the War's Great Development in Signal Communications," *Military Review* (May 1946), p. 7.

As our troops moved with increasing speed across France from the Normandy beaches, long circuits were required "faster than any type of wire circuits could possibly be installed." Radio relay, although widely used forward of army group headquarters, even with its great advantages was unable to satisfy the initial demand. Radio relay equipment could not be provided in the necessary quantity. Sufficient long-range radios were not readily available, and improvisations, such as General Patton's use of the Sixth Cavalry Group as a Third Army communication agency, were unable to fill the gap completely. Field wire was used in enormous quantities; over 900,000 miles were consumed in the European Theater during eleven months of operations. Logistical support was not sufficient to provide such quantities initially to our rapidly moving armies. Communication suffered; as our formations were extended, control was weakened. Regrouping was necessary and our troops were halted in the shadow of the German homeland, while the Germans were able to gather their scattered elements into a semblance of organization. Although they had left behind in their confusion many service and supporting troops which had been out of contact with headquarters, they were able to maintain their major combat grouping for a later defensive thanks to the time offered by the halted Allied advance.

Even though American troops had successfully used radio in offensive operations throughout the war, and even though it had been adapted to joint operations and integrated through radio relay into multi-channel speech and teletype circuits capable of being connected directly into telephone and teletype switchboards to handle voluminous traffic, it did not meet completely the needs of open warfare in Europe. Radio relay had been used in Africa, Sicily, and Italy, but was not provided in sufficient quantity to meet the demands of our rapid offensive. Our operations, of course, could never have proceeded successfully if it had not been for the communication provided, and in the face of our successful offensive, it is difficult to criticize our communication. In the shadow of our success, nevertheless, lay a basic weakness in communication and control, which although it had helped to set the stage for our most serious reversal of the war, the German winter offensive in the Ardennes, was not evident until that surprise attack had effectively split our forces and caused serious losses. The Germans, with the time which we had allowed them when our forces ground to a halt after the dash across France, not only re-formed but actually launched a major counteroffensive.

Out of the early morning haze on December 16, 1944, this German thunderbolt, which had been forged from adversity, struck the U. S. First Army with the terrible force of surprise and violence which staggered the V Corps and sent the VIII Corps reeling in confusion. V Corps in the Monschau area was able to hold after its southern flank had been refused. VIII Corps, which bore the brunt of the attack, was so thoroughly shaken that chaos reigned throughout the vast

undermanned Corps sector. The 14th Cavalry Group on the Corps' north flank was brushed aside by "Kampfgruppe Peiper," the lead tank infantry team of the 1st SS Panzer Division, the elite *Liebstandarte Adolf Hitler*, and then ground between that division and the German 18th Infantry Division as it skirted the northern shoulder of the Schnee Eifel, successfully cutting it off in conjunction with its sister division of LXVI Corps, the 62nd Infantry Division, and isolating two American Infantry regiments. Farther to the south, the German LVIII Panzer Corps smashed against the southern 424th Infantry Regiment of the 106th U. S. Infantry Division, and after battering itself against unexpectedly strong resistance, as the 424th Infantry was bolstered with a strong counterattack by CCB of the 9th Armored Division, the LVIII Panzer Corps veered to the south in its efforts to reach Houffalize and by 18 December, in conjunction with the XLVII Panzer Corps, had effectively disrupted communications within the 28th Infantry Division, opening a route to Bastogne and the west. The German attack had effectively broken through VIII Corps north of the Schnee Eifel in the sector of the 14th Cavalry Group and to the south in the sector of the 28th Infantry Division.

VIII Corps had lost control of the situation. Forward battalions and even regiments were out of contact with their division headquarters, available reserves had been committed and piecemeal reinforcement was made without proper orientation and without information of the enemy so necessary to their sound employment. Communication had been destroyed within the two key defensive divisions of VIII Corps, and this corps, which had operated effectively during the invasion while on the offensive, was now suddenly ineffective as a command agency. The basic cause of this reversal is obscured by the overwhelming enemy force which was brought to bear all along the corps front, but cannot be discounted in spite of the odds; this cause was inadequate communication. This is significant because it points to a general and critical weakness of our American Army. If we are to avoid such situations in the future, we must study the communications employed in the Ardennes Campaign, which is one of the few instances in which our late army fought defensively against initially superior forces on a large scale, and it must necessarily, therefore, set the pattern for the future.

It has been said that the student of the art of war should not criticize the decisions of officers in the field upon the basis of knowledge that was not available to these officers. This dissertation is in no way an attempt at criticism, but an effort to show the importance of communication and its effect on decisions and actions. Commanders must have timely information in order to make sound decisions. In the future information will not be available and decisions will not be properly conceived or executed unless we heed the warnings of military history and their climax in the Ardennes. Communication is the key to command. I have gone to considerable length in outlining the history of military communication in its effect on commanders, their strategy, tactics, and upon the technique of warfare. The full import of this study, unfortunately, is felt only by the man who has found himself in a position of command and great responsibility without the means of either contacting his own troops or locating the enemy. I will now turn to a more detailed study of command and communication in the Ardennes to show our shortcomings to those who aspire to lead American troops in combat with the hope that they will realize the importance of communication.

Let us begin our study with the individual soldier in a front-line unit. The unit I have chosen for purposes of illustration is the 106th Reconnaissance Troop of the 106th U. S. Infantry Division. On December 16, 1944, the 106th Reconnaissance Troop was attached to the 424th Infantry and occupied the village of Grosslangenfeld, Germany, between the 424th Infantry and the 423rd Infantry to the north. I have purposely selected the 106th Reconnaissance Troop as the small unit for discussion because it possessed excellent means of communication and lay in a position between two regiments where contact was critical. The infantry rifle companies along the line had no better means of communication than the troop in question. In fact, infantry units of company size were generally limited to wire and a few very poor short-range radios. The 106th Reconnaissance Troop was tied in by wire communication with the unit on its right, the Cannon Company of the 424th Infantry, and by patrols it contacted Troop B of the 18th Cavalry Squadron on its left next to the 423rd Infantry in the Schnee Eifel. In the 106th Reconnaissance Troop were 13 radios, SCR 506, which were capable of providing reliable communication for a distance of at least 25 miles in the rugged terrain of the Eifel. Not one of these radios was effectively operated on or after December 16, 1944. The 106th Infantry Division was on radio silence prior to December 16, and the reconnaissance troop had failed to provide a listening watch for even one of its radios. After other means of communication had been destroyed and contact with adjacent units and higher headquarters by patrols or messengers was virtually impossible due to enemy activity, it was apparent that radio was the only means of communication available for calling for artillery support, supplies or instructions. The pertinent extracts of the SOI, however, were not available, and the radios could not be netted in the regimental or division nets.

The individual soldier in the 106th Reconnaissance Troop found himself, therefore, shortly after the start of the battle in a small unit which was completely isolated from all other American troops. Wire communication had been destroyed by heavy enemy shelling and messenger communication was prevented by the physical presence of enemy troops who had by-passed the position and cut the wire remaining untouched by artillery fire. Even though individuals in the 106th

Reconnaissance Troop obtained significant information of the enemy and made observations of the movements of large bodies of enemy troops, they were unable to report to higher headquarters and, unfortunately for them, they were unable to call for artillery fire on the enemy troops which were attacking and by-passing their strongpoint. The individual in the troop had one comforting advantage; he was able to talk to his companions, to communicate by voice, and to maintain visual and physical contact with the members of his unit, for the troop was concentrated in the small village of Grosslangenfeld. As he saw the adjacent position of the Cannon Company of the 424th overrun in the dim distance and as he heard from fellow troopers that Troop B of the 18th Cavalry Squadron was withdrawing on the other side of Grosslangenfeld, he was scared, utterly and completely scared. Soon his mind was intent on only one thing, self-preservation. All thought of previous training had been abandoned. Fear had driven from the soldier's mind his will to fight, and this fear was based on tactical ignorance—loss of communication, the foster parent of rumor, despair, and chaos. The troop commander in this case was no more effective than chaff before the wind. As the fog of war swirled and eddied about him, he surrendered, formally relinquishing the command which he had effectively terminated when he had failed to provide adequate communication.

The 106th Reconnaissance Troop had been eliminated, yet it had provided the next higher commander with not one bit of information upon which he could act. Units all along the line were in the same predicament; with wire communication cut off they were unwilling to expend men on missions of liaison and contact, and in many cases such a course was virtually impossible. As communication was destroyed, the situation became increasingly obscure. For every report received, at least ten were not. Communication in forward areas had been quickly and easily destroyed. In this confused situation, higher commanders found themselves frantically grasping at bits of information, forcing themselves to make decisions based on assumption. Battalions in many cases quickly lost control of companies when open wire circuits were cut by the initial artillery preparation. Regiments were in intermittent contact with battalions and the longer lines to division were effectively destroyed by sabotage, artillery bombardment and the movement of vehicles in the heat of battle.

The 106th U. S. Infantry Division had inherited from the 2nd Infantry Division, which it had relieved before the battle, a wire system of long standing which had been developed over a period of weeks into a complicated maze of wires. After the enemy attack had begun to affect the wire system, wire teams were unable to decipher the maze and were slaughtered by the enemy as they valiantly laid wire into the very face of advancing enemy tanks. The 422nd and 423rd Infantry Regiments of the 106th U. S. Infantry Division were cut off in the Schnee Eifel and two of the infantry regiments of the 28th Infantry Division were cut off from communication with their division headquarters. Much has been said about the plight of the 422nd and 423rd Infantry Regiments which succumbed quickly to the enemy after they had been cut off in the Schnee Eifel. It is not commonly understood that these regiments were unable to call for artillery support. They could not do so because communication had been severed. The regiments had been thinly spread, for the 106th Division had occupied a front of approximately 28 miles. In such a situation, the most effective initial resistance that can be offered is through the employment of artillery fire directed by observers in front-line strongpoints, and the next course of action is the transmission to the rear of information that will enable the commander to gauge the enemy attack so that he can dispose his forces to meet it. Neither of these courses was open to the two infantry regiments in the Eifel.

It is interesting to compare the situation of these regiments of the 106th Infantry Division with that of the 101st Airborne Division at Bastogne. When it looked as if the 101st Division was going to be surrounded at Bastogne, a complete radio relay terminal set was mounted on a truck and sent into Bastogne as the last vehicle to enter the town before the Germans completed its encirclement. Through this set Corps had telephone and teletype communication with the division, whereas wire communication would have been impossible.

Although the commander of the 106th Infantry Division promptly committed his meager reserves on 16 December, reserves under Corps control did not arrive in time to save the thinly spread troops of the 106th before the Schnee Eifel had been cut off by the German LXVI Corps. Time was of the essence and communication was necessary to make the most of the time available. Delays in the commitment of reserves were due not to poor intelligence but to poor communication which failed to transmit timely information, and apparent reluctance on the part of the Division Commander to present to Corps a dark picture of the situation until it had been established by reports. The 106th Infantry Division, although new to combat, was well trained from the standpoint of intelligence, but friendly as well as enemy dispositions and movements were obscure due to unforeseen communication difficulties. *No infantry division in the U. S. Army possessed a radio communication system adequate for control in the mobile defense of large areas.*

The advantage of a strong radio system is evident when we consider the excellent intelligence initially furnished by the 14th Cavalry Group, a unit organically dependent on radio communication, as opposed to the infantry regiment whose tactical doctrine relied on wire as the principal means of defensive communication. The 14th Cavalry Group, attached to the 106th Infantry Division, was able to produce timely intelligence early in the attack due to its organic communications advantage. Radio functioned under the batter-

ing of artillery bombardment and withstood the forays of enemy troops and tanks; wire did not. The S-2 of the 14th Cavalry Group, basing his estimate on reports received from front-line cavalry units, correctly evaluated enemy strength and accurately located the 1st SS Panzer Division during the morning of 16 December. Later developments were to show, however, that the organically sound communication system of the cavalry group failed to function properly under stress, primarily because of personnel failures, failures which produced significant time lag in the transmission of messages. In one instance the group liaison officer at division reported the group locations approximately nine miles forward of actual positions. The discrepancy in this case was due to bungling and delay in deciphering slidex code by the liaison officer.

Since reserves could not be committed in time to halt the German attacks in the forward areas, the enemy was able to provide the necessary momentum to his two initial penetrations in the VIII Corps sector to drive deep into our rear areas cutting communications as he went. Wire communication was destroyed and service units were thrown into confusion, with the exception of those organizations which were able to rely on radio for control.

> During the critical days of the "Battle of the Bulge," radio played what was probably its most important role in First Army Ordnance Service. . . . Two battalion headquarters and approximately twelve ordnance companies (52d Ordnance Group) were located in the path of the advancing German forces. All these units, with the exception of one ordnance medium maintenance company were withdrawn without loss of personnel or matériel. One battalion headquarters, the 86th, and several of its companies, located in Malmédy, were ordered by telephone to withdraw on the afternoon of 17 December. This was the last wire communication that the 52d Ordnance Group had with any of its units located in the sector of the German attack. All other units of the 86th Ordnance Battalion and the entire 83d Ordnance Battalion were alerted by radio and, as the necessity arose, were ordered to withdraw along specified routes.
>
> During the next two or three days, Army Headquarters moved twice and 42d Ordnance Group Headquarters moved twice. During this time Group Headquarters was in continuous radio communication with Army Ordnance and with all its battalions. . . .
>
> The attention of the reader is invited to the fact that with the exception of a few telephones, a small amount of wire, and a few switchboard operators, all the personnel and equipment of the First Army Ordnance Communications System was in excess of appropriate T/O&E, and was obtained by special authorization. It is earnestly hoped that, in the adoption of future tables of organization and equipment for ordnance units, serious consideration will be given to this vital accessory to ordnance service—communications—and that adequate personnel and equipment be provided therefor.[3]

As the German spearheads were driven through the army maintenance area, the command channels of our major headquarters were destroyed. Open wire circuits and buried cable were effectively cut and finally the radio link system between Army Group and Army was overextended. Although personal liaison could still be maintained and roundabout communication was improvised through commercial lines, communication was one of the considerations in the shifting of command of First Army to 21st Army Group control. We see, therefore, that communications had a major influence on the tactics and command employed in this great battle.

Now what lessons are to be derived from the Ardennes campaign? It seems to me there are at least the following:

1. Radio is fundamentally the principal means of communication on the mobile defense. Wire, although more secure from the standpoint of counterintelligence, is not dependable when subjected to bombing and heavy artillery concentrations.

2. Radio link is definitely advantageous for handling large volumes of traffic but alternate or mobile relay stations must be provided in quantity sufficient to allow regrouping, shifting of troops, and large-scale retrograde movements.

3. When defending wide areas, we must of necessity hold lightly and rely on air and artillery support and counterattack as our principal defensive means, and these means can be employed only through a flexible dependable communication system.

4. During World War II, radios of adequate range were not available in sufficient quantity in infantry divisions to allow employment of the divisions defensively on wide fronts. Adequate radio systems were not provided for supporting service units.

5. Even though sufficient radios of proper range be provided, they will not provide command control unless operating personnel is trained to use them efficiently.

6. Although radio communication is possible when equipment and trained personnel are provided, commanders of all echelons must make communications systems workable through personal support and supervision.

In general terms then, we can say that during World War II communication, principally radio and radio link, made possible the command and coordination of our field armies, and that while these means of communication were capable of supporting a successful and

[3] Colonel J. D. Sams, "Communications In Army Ordnance Service," *Military Review* (May 1947), p. 53.

rapid offensive of combined arms, they must be provided in greater quantity before we can obtain maximum speed and momentum in our attack. Moreover, the allocation of equipment should include that designed to meet the needs of the defense as well as the offense. Less reliance should be placed on defensive wire communication. We should devote more time to the training of personnel in the use of communications, and we should spare no effort in developing an awareness of the significance of communications in officers of all ranks.

We have traced the development of communication and its effect on command from the beginning of history until the end of the recent war. Combat has been marked throughout the ages by a constant struggle for dominance by increasing offensive power which, although it has usually been met by an increase in defensive strength, represents a definite trend toward open warfare. This trend has been dependent upon development of means of communication and control. Early commanders were restricted to struggles based primarily on physical and numerical superiority on the immediate battlefield. Once battle had been joined, troops could not be manipulated and reserves could not be controlled. After the commander had made his plan and committed his troops, he had little influence on the outcome of the battle. Later developments in control permitted flexibility, and the Romans were able to employ mobility to defeat the Carthagenians who had failed to perfect the technique of coordinating the movements of large forces. Europe was unable to produce a system of control whereby her larger armies were able to meet the rapidly moving Mongol columns to destroy them in detail before their juncture at the Danube. Even Napoleon was not able to handle his reserves as he desired for his means of communicating orders were faulty. During the later stages of the Civil War and during World War I, the trend toward open warfare was blocked because communications had been adapted to the defensive in such a way that the slower offensive could be countered with reserves and artillery. Wire communication had provided the defensive with great strength by the end of World War I, and the balance did not swing in favor of the offensive until the widespread use of radio made possible adequate control on the offensive in World War II. Just as radio has strengthened the offensive, however, it promises great strength to the defensive if employed along the lines indicated by our lesson in the Ardennes. The future of the defense is even stronger when we consider the possibilities of employment of long-range guided missiles directed by observers from lightly held forward areas.

The capabilities of an organization to conduct a mobile defense against tanks and infantry, with air and artillery support, depend on the following factors, as well as the mobility and strength of the enemy force:

1. Width of sector to be defended
2. Artillery, guided missile, and aerial support
3. Available reserves and their mobility

These three factors are all dependent upon the control which the commander is capable of exercising.

In the first instance, the width of the sector determines the nature of the composition of garrisons in forward positions. If the sector is wide, garrisons must of necessity be small and widely separated, and their mission must be that of reporting enemy dispositions and directing artillery and long-range guided missile and aerial attack upon the enemy formations. It can be assumed that in the future the manpower differential between our country and our probable opponent will dictate such a defense, based on holding wide sectors lightly, with forward elements located along important terrain features and avenues of approach. The tying-in of this forward line will be, in most cases, dependent upon radio communication which is the only means upon which the commander can depend for control.

In the second instance, the commander can support the holding garrisons only in proportion to his ability to control communication with these elements in order to direct fire and bombardment upon the enemy.

Considering the employment of reserves in the third case, it is obvious that the commander can obtain accurate and timely enemy information, upon which to base his decisions for employment of reserves, from his forward elements and supporting aircraft, primarily through radio communication. Moreover, as has already been indicated, manpower considerations can be assumed to be such that the commander cannot afford to make any error in judgment in committing a reserve that will be extremely difficult to replace. Since his communication must be positive, rapid, secure, and flexible enough to stand up under the pounding of enemy attack, it must of necessity be built around radio.

In the final analysis, therefore, command in the conduct of the mobile defensive type of warfare which may be expected in the future, will be dependent upon communication based on the intelligent use of radio in all echelons.

Any offensive action that we may adopt in the next war must inevitably consider the manpower differential also. Intelligence will be vital to the commander, who cannot embark upon an operation without assurance of success with minimum losses. Control must extend from airborne troops to guided missile and rocket support operated from rear bases. Communications must provide this flexible control, as well as the means for transmitting intelligence. As in the mobile defense, the system must depend on radio.

In order to insure successful command of our troops in the future, we must provide radios of appropriate ranges in all echelons. We must make all personnel communications conscious. Each commander must consider communications as a potent weapon, which requires his personal attention and supervision.

RECONNOITERING

IN a recent swing down the Pacific Coast and through the Southwest the Editor's seat became pretty well worn down not only figuratively but literally. There is, however, a great deal going on that is of interest to Armored Cavalrymen. For instance, at one time or another many of our readers visit Los Angeles. Probably few of them know that they have available for use one of the finest Officers' Clubs in the United States.

Known simply as the "Officers' Club," the installation is located at 2626 Wilshire Boulevard close to downtown Los Angeles. It was formerly the site of a very comfortable apartment hotel and by tearing out this and that and replacing with a modernistic bar, lounge and dining room, the Directors have emerged with a really smart rendezvous for officers and their families and friends of all branches, services and Allied Armies.

Maj. Gen. D. H. Hudleson is Chairman of the Board of Directors, with Col. J. T. Roberts as Executive Director and Lt. Lawrence Guterson as Club Officer.

Col. Roberts will be remembered as the Trains Commander of the 9th Armored Division during the war, and is now assigned as commander of the 13th Armored Division (Res). The Division is very active in the Los Angeles area and promises to become one of the strongest supporters of the JOURNAL.

Besides the high-class lounge, dining and bar facilities, there will soon be a sales store opened for Class Six supplies. Due to some cagey buying by the Directors a very unusual stock will be available.

All visiting officers are urged to take advantage of the Club facilities during trips to the West Coast.

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FOR the Cavalryman, there can be no better evidence of Branch unification than that turned up by a visit to Fort Bliss. To see what the Coast Artill... (pardon, the Antiaircraft Artillery) has done to preserve the atmosphere of the horse days warms the cockles of an ex-hussar's heart.

The horse show ring looks better than in the days when Walter Witaski rode for the Garry Owens, or when Harry Chamberlin changed leads on *High Hat*. The polo fields are as green as a bit of the Ould Sod, under the watchful eye of Col. Ray Lewis, Deputy Post Commander, and are awaiting the umpire's throw to Cecil Smith and a host of the hottest malleteers ever to grace the turf below the swimming pool.

Of course, this is all in preparation for the Fort Bliss Centennial celebration in November. The horse show ring (Howze Stadium) will be the scene of an exhibition by the Mexican Olympic Team which triumphed recently in the games in England. The polo tournament will involve a dozen or more teams, including stars such as Cecil Smith, already mentioned, and many others from El Ranchito and the other top southwestern Clubs. All in all, it promises to be the best meet ever held at any time between Long Island and Los Angeles.

Incurable Garry Owens will take satisfaction in knowing that Pop Graham still flaunts a sign "7th Cavalry Tailor" right in the midst of Guided Missile batteries and other such doodads of push-button warfare. Pop says to hell with it. If they don't like it they can . . . well, you know Pop.

It does seem a bit ironic to have all this done by the Antiaircraft Artillery and the Guided Missile boys. And not a single apology of any kind is offered. Apparently they just like it.

❖ ❖ ❖ ❖

THE Editor made a flying trip to the Armored School in mid-September for the purpose of swelling the subscription list and at the same time to assure the supporters of the Journal as to the strict editorial policy of publishing the magazine by and for Armored men.

A tour of the School these days is quite an eye-opener to anyone whose military education, in the formal sense at least, has been standing at ease since, say, even as late as 1943. The graduate of the Branch schools or of Leavenworth in those times was quite convinced in his own mind that he had been exposed to some pretty high-powered pedagogy. But it can be safely said that the schools of yesterday compare to the Armored School as the little red schoolhouse of a hundred years ago compares to a modern streamlined college.

Brig. Gen. Bruce C. Clarke, Assistant Commandant, has energetically pushed drastic improvements in classrooms and in training aids. Aided by a very able staff and corps of instructors he has renovated buildings so that the present classrooms are a distinct pleasure to work in, both from the student's standpoint and the instructor's. Walls and lighting make a comfortable color combination; chairs have soft cushions which effectively ward off the occupational diseases of the military student; microphones are scattered at handy intervals to assist the student who is called on to speak; blackboards are metal, and the little gimmicks which are used as markers for tactical problems are magnetized so that they can be stuck anywhere, at will, on the board and as easily removed.

We were guided through the various buildings which house the Automotive instruction by Lt. Col. Reynolds who heads this important activity. It was a painless trip, since it was only necessary to climb into a peep and ride through. However, any guest is frequently forced to dismount through sheer interest in the various training aids which are plentifully strewn about and which are the product of the inventiveness of the instructors. These consist principally of cut-down working motors and chassis, plastic mock-ups and the like which give the student an immediate picture of what goes on inside a vehicle or any of its parts.

On the whole the tour forms a most effective backing for the article in our last issue by Mr. Henry C. Porter, Civilian Educational Adviser at the School on "Instructional Methods in the Army." Mr. Porter's theme was that the Army today (and *we* mean the Armored School) leads the world in the quality of its instruction. Since it takes but a glance to prove him right it is no wonder that more and more educators are being attracted to the Armored School.

WHAT DO YOU WANT?

by Lieutenant Colonel Paul M. Morrill

NOW is the time for all good officers to come to the aid of themselves. This is the season when the thoughts of all officers should be directed toward the annual "Statement of Preference." Section IX of War Department Circular 130 of the 1947 series provides for the submission by all officers of a Preference Card to be sent annually to The Adjutant General between the 15th of November and the 15th of December. This is doubly important this year because the old "Statement of Preference" has been replaced with the new DA AGO Form 483 (Officer's Preference Card) of 1 April 1948.

Although dated on All-Fools' Day this new card is no joke. A little study and contemplation before filling it out will pay you big dividends in consideration for assignments that you believe desirable. Experience with preference cards in the past has been such that some words of explanation and advice are indicated.

Your preference card is filed in the Career Management Branch of your duty arm or service. In the Cavalry Branch (and I'm sure the same is true in all other arms and services) your preference card is consulted every time you are considered for reassignment. It is the only standard form in this office that reflects your personal desires. It is *YOU!* With that in mind consider the following simple list of DO's and DON'T's:

DO SUBMIT A PREFERENCE CARD. Submit it now and keep a copy for your own files. Examine this copy periodically to make sure that it continues to reflect your personal desires. Whenever circumstances arise which cause the card to be out of date from your point of view—submit a revised card.

DO PREPARE IT NEATLY. Use a typewriter if at all possible, or at least print it neatly in ink. An illegible card cannot advance your interests in any appreciable way and might be considered indicative of a slothful and careless attitude.

DO FILL IT OUT PROPERLY. Because this is a new form consult the check list below.

DON'T ASK THE IMPOSSIBLE. By so doing you waste your opportunity to be considered for the possible and desirable.

DON'T FOLD OR MUTILATE. The card must be filed and it must stand up under months of clerical handling.

DON'T BE VERBOSE. A brief statement of exactly what you want is the most easily noted when hundreds of cards have to be screened.

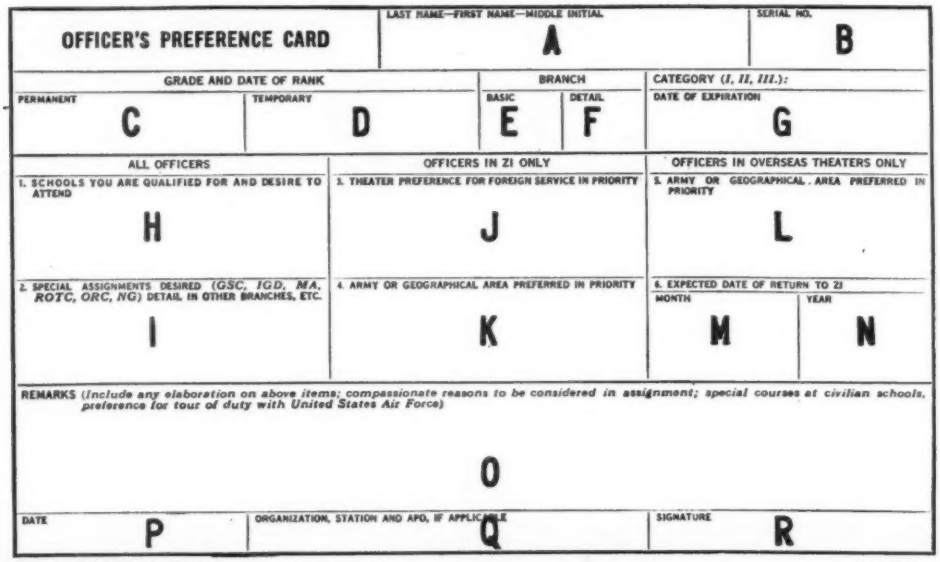
Reproduced below are facsimiles of both sides of the new card. Block letters have been superimposed on the various spaces to coincide with the following check list:

A—Name—*Jones, John J.*

B—Army Serial Number—O-66666.

C—Permanent Rank and date—*Captain, 1 July 1948.*

D—Present Rank in which serving and date—*Lt. Col., 7 September 1945.* Many officers have the same per-



DA AGO FORM 1 APR 48 483 Replaces WD AGO Form 483, 1 Oct 46, which is obsolete. 16—55219-1

At an appropriate moment, some hints from the Executive Officer of the Cavalry Branch on a subject close to us all.

manent and temporary ranks but with different dates.

E—Basic Arm or Service—*Cavalry or appropriate arm or service.*

F—Duty Arm or Service to which detailed (by Department of the Army orders only)—*Cavalry,* or appropriate arm or service.

G—For non-regular officers, category and date of expiration; for regular officers—*RA.*

H—Schools desired. Do not list schools which you are not eligible to attend. Special courses and foreign or schools of other services may be entered either here or in space "O"—*Armed Forces Staff College.*

I—Special assignments as desired—*ROTC, Mississippi State.*

J—ZI officers only list overseas theaters in order of priority desired. If "None" is entered you will be assigned to whatever theater has a vacancy when you are next due for foreign service. 1. EUCOM, 2. FECOM.

K—ZI officers only list geographical areas in US that you desire, in order of priority—*1. Hattiesburg, Miss.; 2. Denver, Colo.; 3. West Coast, etc.*

L—Overseas officers only list geographical areas in the US that you prefer, in order of priority—*1. Northeast States; 2. Cleveland, Ohio; 3. Fort Benning, Georgia, etc.*

M & N—Expected date of return to US (overseas officers only)—*May 1951.*

O—Any remarks you wish to make including expansion of remarks under any other space. If you need additional space use a blank 5" x 8" card stapled to the back. Place staples through left margin only. Do not use paper clips.

O—(Continued)—*Would like Naval School of the Line, Air Command and Staff College. Request dry climate due to wife's asthma, etc.*

P—Date of submission of this card—*21 Nov. 1948.*

Q—Complete Military Address—*6th Constabulary Sqdn, APO 139, New York.*

R—Your signature certifying that the information on the card is representative of your personal wishes.

S—Do *NOT* put anything in this space. It is designed to assist you in filling out the next space.

T—Note Instruction 3 on the card. All officers who have completed 4 or more years' service should indicate a desired mobilization assignment this year, and be guided in the future by the periods indicated. Do not request an assignment for which you are not now qualified. You may list several in order of priority—*1. Command, Tank Bn; 2. G-3, Armd Div; 3. Military Govt, any level.*

U, V & W—Do not fill these out. They are intended for the use of the Career Management Branch.

By following these simple instructions, the result should be a completed accurate, neat and usable card, one which will insure your consideration for the assignments you think desirable . . . represent you in your Career Management Branch . . . help us to help you . . . and contribute toward the goal of mutual understanding and confidence.

If this is true you may rest assured that your desires will be considered, and wherever possible, your assignments will be those you want.

Preference Cards will be submitted to reach The Adjutant General annually between 15 November and 15 December. Mail directly to The Adjutant General, Department of the Army, Washington 25, D. C.

FOLLOWING FIELDS WILL BE USED AS A GUIDE IN INDICATING TYPE OF MOBILIZATION ASSIGNMENT DESIRED:

1. COMMAND DUTY — S

2. STAFF DUTY
- A. PERSONNEL AND ADMINISTRATION
- B. INTELLIGENCE
- C. OPERATION AND TRAINING
- D. SERVICE, SUPPLY AND PROCUREMENT
- E. RESEARCH AND DEVELOPMENT
- F. PUBLIC RELATIONS
- G. MILITARY GOVERNMENT
- H. IGD
- I. ETC.

7. MOBILIZATION ASSIGNMENT DESIRED — T

INSTRUCTIONS

1. Volunteers for foreign service, airborne duty and civilian schools must make application through channels.
2. Personnel desiring tour of duty with United States Air Force may so indicate under Remarks.
3. Mobilization assignment preferred—on completion of 4, 7, 10, 14, 17 and 21st year of service each officer will indicate the mobilization assignment desired.
4. Under "Branch Basic—Detail" put in name of branch.
5. When orders are issued effecting a PCS, space No. 10 will be initialed by officer directing issuance of orders.

DO NOT WRITE IN SPACE BELOW

8. TO BE RELIEVED O/A	9. ASSIGNMENT SLATED FOR	10. INITIALS
U	V	W

U. S. GOVERNMENT PRINTING OFFICE 16—56219-1

POST EXCHANGE

On Languages

I HAVE just read the fine article, "Light over Babel," by Max Sherover, which appeared in your September-October issue. Mr. Sherover effectively stated the language problem as it exists today, and he gave good advice as to the best modern method of learning other languages.

However, I regret that he did not carry the answer to the lingual difficulties of this world further, to the best solution of them all.

On page 29 there is a boxed quote from General Devers: ". . . many of the difficulties encountered . . . could have been more expeditiously and efficiently resolved if there had been a common meeting ground of language." Mr. Sherover should have pointed out that just such a common ground exists today—the World Interlanguage, Esperanto. This easy, logical and flexible language has passed the practical test of every sort of use during sixty years. Today it is spoken by several millions of people in countries throughout the world. Each year there is a world congress attended by delegates from at least thirty countries. All proceedings are carried on in Esperanto—everyone understands, and the language problem is no longer a problem at all.

You can imagine how much easier the armed forces of many nations could communicate with one another if each one would give a short course in Esperanto to every soldier destined for foreign service. Each man would know his own language, and Esperanto—the latter being the neutral passport of understanding, good in any country. This language can be learned much quicker and easier than any national language, and it has the added advantage of being neutral—no national sensibilities are injured.

I speak, read, and write Esperanto. My mail brings letters from many foreign countries, from men who speak no English—yet we communicate with ease.

There, Sir, is the real answer to the language problem. It is going to take a good deal of courage, a full measure of vision, to put it to official use. But to any clear-thinking person the rewards are obvious. Then truly the light over Babel will brighten until it illuminates all the dark corners of misunderstanding.

GEORGE W. BAILEY, JR.,
Captain, Air Force Reserve.

Bebs vs Debs
Bright vs Dull Eyes

ALL men can usually be divided into two general classifications (1) The Bright Eyed Boys and (2) The Dull Eyed Boys. Or short title: BEBs and DEBs.

It is important to anyone who exercises leadership or holds an executive position to be able to tell the BEBs from the DEBs. He needs conscientious men for some jobs, and work horses for others. But for certain key positions he must have men with imagination and a sense of proportion; they must be able to see into the future and anticipate problems . . . and men who have these qualities are the Bright Eyed Boys, the BEBs.

Please do not misunderstand me: Almost all DEBs are valuable men on the right job, but to place a Dull Eyed Boy on a Bright Eyed Job will result in a double failure—because his failure is also a failure of the man who selected him for that job.

This poses the question, "OK, so how do you tell the BEBs from the DEBs?"

Well, there are a lot of ways of doing this, but mostly it is just up to the judgment of the man making the selection. As one type of aid to judgment, here is an example of a concrete approach to the problem which can be used in some cases.

During the war a division chief of staff (while still in a staging area) was instructed by the division commander to obtain liaison officers from the three regiments—each liaison officer to be selected by his own regiment.

Since these liaison officers would also serve as assistant G's, it made quite a lot of difference whether they were BEBs or DEBs.

Maybe you can guess what happened: The regiments—one in particular—selected animals that looked sound of wind and muscle, but who were slightly lame in the head. As a result a little test for another set of candidates was evolved.

This test required each man to draw a freehand sketch of the floor plan of division headquarters—just a rough outline of the main offices (all of which were of different sizes and shapes). In addition each candidate wrote a single page essay on what characteristics he thought a good staff officer should have.

Of course there was a personal interview too.

The handwriting and grammar, along with the ideas expressed in the short essay, helped to eliminate some of the candidates hopefully offered by the regiments for adoption. But it was the rough sketch of the headquarters floor plan that proved the best indication of whether or not the candidate was a BEB or a DEB.

Artistic ability was not the thing that counted. It was whether or not the completed drawing was generally centered on the page—showing that the man who drew it had mentally visualized the whole drawing before he started to draw a part of it. Also the relative size of the rooms was a clear indication of whether or not the candidate viewed things in their proper perspective. If the

sketch showed the G-2 office much larger than the G-3 office, when in actual fact the G-3 office was the larger, this indicated he viewed things one at a time—and not in relation to each other.

On the other hand, those who turned in simple rough sketches generally centered on the page—with the various offices in the proper size with relation to each other—these were the BEBs who proved themselves good planners, who could see ahead and separate the real problems from inconsequential details.

It is not always feasible to hold a formal test, of course. But in selecting an officer to fill a job that definitely requires a BEB, it is easy to assign the candidate some job that requires a written report. Suggested type reports (tests) are: To investigate and report on an automobile accident; to submit a plan for a combat range; or the general layout for a proposed athletic plant . . . and there are many others.

These little reports will test the officer without his knowing that he is undergoing such a test—and aid in determining whether or not he is one of the Bright Eyed Boys.

RIPOSTE.

* * *

LIEUTENANT COLONEL ARTHUR HARRIS' article in the July-August issue of the ARMORED CAVALRY JOURNAL is slightly remiss on two or three counts which I feel are rather important to the History of Armor.

May I set these down as follows:

1. The Battle of Alamein could never have achieved such a thundering success had it not been for the German-Italian attack on the 31st of August, 1942, which was Rommel's "do-or-die" operation. This attack developed into what is now known to history as the Battle of Alam Halfa. This battle lasted seven days. 21 and 15 Panzer as well as 90 Light made deep penetrations into the British lines. In some cases these penetrations were 28 to 30 miles in depth. An attempt to cut off these units was made on the night of 3/4 September. This action, fought by the 2 New Zealand Division, was not successful, but severe casualties were suffered by the enemy. On the seventh of September the battle was drawn to a conclusion with the enemy still in possession of the western end of the British FDL.

It is interesting to note that neither of the two "crack" Italian Armored Divisions (Ariete and Littorio) were able to breach the British mine fields.

2. The Battle of El Alamein was begun on the *23rd of October* and not on the 31st. There was a constant din and dogfight from the 23rd until the 4th of November, 1942, when the actual breakout and pursuit started.

3. Colonel Harris states that the 8th Army did not catch the Afrika Korps until the 18th of February 1943. That is not correct. Heavy Armored fighting occurred at El Agheila 13 through 19 December, 1942, and again a definite stand was made by Rommel at Buerat and a battle was fought 15 through 23 January 1943, preceding the entry of Tripoli.

The fight for a respite for American II Corps (being hard pressed from the Kasserine toward Tebessa from Gafsa) did not take shape until 24 February 1943. At this date the 7th British Armoured Division and 51st Highland Division began to press the actual Mareth Line, causing Rommel to break off his attack against the Americans; and 21st Panzer was sent hurriedly to face the Eighth Army again.

The entire German Panzer strength set out to crush the "administratively stretched" Eighth Army. This action, employing the 10th, 21st and 15th Panzer Divisions attacking in three columns, was culminated in the Battle of Medenine in which the Germans lost 52 tanks of all types to infantry and antitank weapons. Only one British Squadron of Tanks engaged (British Squadron equals the American Troop in strength) and these accounted for only seven enemy tanks. In this battle the British *employed no mines* and *lost no tanks.* This action led to the success of the battle for the Mareth Line, which followed—and I consider it an absolute parallel to—the Battle of Alam Halfa, which led to the victory at Alamein.

The battle for the overrunning of the Mareth Line started on the 20th of March and ended in the brilliant success at El Hamma on the 29th, secured by the New Zealand Corps (temporary designation) and the 1st British Armoured Division, assisted by General LeClerc's Free French component group.

I sincerely hope that this letter will be taken in the proper light and will be considered as merely a refresher and a point for discussion and mutual interest.

CORPORAL CASILEAR MIDDLETON,
(Formerly a lieutenant with the 1st Royal Dragoons and the Royal Canadian Dragoons, 1941-45, Eighth Army)

* * *

I HAVE enclosed a personal check for a renewal of my subscription to your magazine.

If your November-December issue turns out as well as it appears it will you will have made an excellent solid contribution to keeping reserve officers up to date. The weakness of the present reserve program has made it necessary for many officers to rely on the service journals to keep them abreast of military developments. Keep up the current information on the status of armored troops throughout the world.

ARTHUR G. VOLZ, JR.,
Major, MI-Reserve.

HENRY C. PORTER

OPERATION LEARNING

Mr. Porter, Civilian Instructor in the Instructor Training Division of The Armored School, covers a subject of primary importance to all service personnel.

FOREWORD

One of the most frequent complaints of students attending The Armored School is, "I have been out of school for so long that I have forgotten how to study."

OPERATION LEARNING is a suggested solution to the problem of how to realize the most learning from the time and energy spent in study. The "S-ARMOR" method of study, as explained herein, and the suggestions on how to pass examinations are based on established principles in the field of educational psychology. Similar methods have proved sound not only in theory but also in practice at our colleges, universities, and service schools.

I believe that application of the principles contained herein will prove a key to more effective learning.

(Signed) BRUCE C. CLARKE
Brigadier General, USA
Assistant Commandant

PLANNED APPROACH TO STUDY

AS a student you will learn many things which will be valuable to you in the advancement of your career. In addition to the military skills and knowledge, which will become the tools of your trade, you will acquire new interests, attitudes, appreciations, and work habits, which will be of equal or greater importance to your professional growth. If you will think back to your last school experience you will probably realize that a great deal of the detailed information learned in school is soon forgotten; the techniques used in solving problems, the basic principles, and the habits of study, however, remain as an indispensable part of your education. A well-educated man is not necessarily one with an encyclopedic mind, but rather he is a man who knows how to learn the things he needs to know for the accomplishment of his objectives. In order for you to be well educated in your profession you must know how to study effectively.

Like a military campaign, an effective study program is to a large extent a matter of planning. The demands upon the student for learning and retaining large quantities of subject matter are greater in The Armored School courses, for example, than in most colleges and university graduate schools. Other military service schools are likewise upping their requirements. It is, therefore, essential that the student of the future spend his study time as efficiently as possible. Efficiency calls for a plan; without a planned approach your study becomes strenuous. Efficiency brings greater results with lessened effort; strenuousness brings results with abnormally greater effort. In this article a plan is submitted which should enable you to develop efficient study habits.

Investigations have shown that most students can save from one fourth to one third of their time if they systematize their study efforts. Effective methods will help the student understand and remember what he is studying. Take inventory of your study habits, and if you find that you do not have a planned approach, apply the study techniques suggested here; they will produce results.

THE S-ARMOR METHOD OF STUDY

The objective of a student at The Armored School is to *study armor;* therefore, let us call our method of study the S-ARMOR method. The title for this study technique is designated in this way to make it easier for you to remember and apply; just think of your objective as a student—*study armor*—and you have the steps which the student uses in this method. The meaning of this mnemonic device is:

S urvey
A sk questions
R ead
M emory devices
O rganize
R eview

SURVEY. Your first step in the study process is to glance over the chapter headings and topic headings; if the chapter has a summary paragraph this will also list the ideas developed in the chapter. This will give you an over-all view of the material and will assist in your later reading. You will see how the parts fit together into the unit and then when you read the assignment, ideas will be meaningful and related. Some students like to make this survey several hours before the study period, or when they plan their activities for the evening. This orientation will help you to unify the ideas as you read them later.

ASK QUESTIONS. Make your study active by mentally rephrasing chapter titles and topic headings as questions. If you practice this, it will soon become an unconscious habit which will set your mind to receive and remember the essence of the material at hand. If you have this mental habit set, important points which answer your question will stand out, and the explanatory details will take their subordinate place in your reading. This practice will enable you to read with a purpose: to answer the questions you raise mentally. The skill which you develop in formulating these questions will determine the nature of your reading. If your question is well formed you may "skim" through the ma-

terial. Skimming is no different from ordinary reading, except that no time is wasted reading the wrong things. Spend no more time in reading than is necessary to answer the meaning of questions relating to topic headings.

The approach to study suggested in these first two steps was recommended by John Morley, an eminent British scholar and statesman, who said,

> "Some great men—Gibbon was one and Daniel Webster was another and the great Lord Stafford was a third—always, before reading a book, made a short rough analysis of the questions which they expected to be answered in it, the additions to be made to their knowledge, and whither it would take them. I have sometimes tried that way of studying and guiding attention; I have never done so without advantage, and I commend it to you."

READ. Read for *meaning;* read to answer the question which you have mentally phrased from the topic headings. Your reading then becomes not a passive plowing along each line, word by word, but an active search for the *answer.* Here is where many students confuse reading with study; reading is not study, but one phase of the study process. When you study, your reading rate will vary. Some topics can be read by *skimming;* other topics, about which you already have considerable knowledge, may be read by using *judicious skipping* in which reading only topic sentences here and there gives you the meaning you seek. The good reading habits which you learn in your course in *Improvement of Reading* should be employed in your study. As a rule, outstanding students are quick readers. Speed is important because it enables you to read and review materials in a limited period of time. Your rate of reading, however, will be governed by your *understanding.* Do not hesitate to stop and think things over; but don't let this be a time when your mind wanders. In other words, read slowly enough to grasp the meaning, and yet push yourself for more speed; this is the key to training yourself for rapid and efficient reading in study.

MEMORY DEVICES. Here are some suggestions as to aids which students use to help them remember the things which they have studied:

(1) *Underlining.* This technique is useful in designating important points to be considered and learned. A text (your own) which has been underlined is much easier to use in a review. Instructional materials such as advance sheets and precis should always be underlined for ready reference in class. Keep these things in mind when you underline:

(a) Read a whole passage before underlining any part of it.

(b) Underline only the key passages—avoid excessive underlining.

(c) When you underline for a special purpose, use a double line.

(2) *Marginal notes.* Do not hesitate to make marginal notes on your instructional materials. These will help you to find an idea in the review and give meaning to your underlining. Do not overdo it.

(3) *Outlining.* After material has been read, your objective is to remember it as long as possible. It is a well-known fact that forgetting sets in as soon as learning has stopped; therefore, in order to learn something to be remembered for some time, there must be a frequent recall of the main points. There is no better way to effect this recall than to refer to a set of well-prepared notes which have been outlined so that the organization is clear. Here is a sample outline of this article; notice the method used in designating main points:

OPERATION LEARNING

1. PLANNED APPROACH TO STUDY.
   - a. *Importance of study habits.*
     - (1) Subjects learned in school are often forgotten.
     - (2) Habits of study stay with you.
     - (3) Knowing how to learn is an important asset.
   - b. *Need for a planned approach to study.*
     - (1) Great academic demands upon student's time at present-day military schools.
     - (2) To spend study time efficiently.
     - (3) Students save from one third to one fourth of their time through systematized study plan.
2. THE S-ARMOR METHOD OF STUDY.
   - a. *Survey.*
   - b. *Ask questions.*
   - c. *Read.*
   - d. *Memory devices.*
     - (1) Underlining.
     - (2) Marginal notes.
     - (3) Outlining.
       - (a) To help recall.
       - (b) To help organize.
   - e. *Organize.*
   - f. *Review.*
3. HOW TO PASS THE EXAMINATIONS.
   - a. *Reasons for examinations.*
     - (1) Motivate and stimulate learning.
     - (2) Provide practice in the things learned.
     - (3) Indicate student progress.
     - (4) Enable objective grading of performance.
   - b. *How to prepare for an examination.*
     - (1) Review intelligently.
     - (2) Don't cram.
     - (3) Study with a group.
     - (4) Schedule your time.

c. *How to take an examination.*

(1) Proper mental attitude.

(2) Read the problem.

(3) Work vigorously.

(4) Watch your time.

ORGANIZE. After you have read one topic of the lesson, look up from your study and try to briefly recite the answer to your question. Try to think of an example from your Army experience which fits the reading selection. Think how this material might be used in future situations. Associate the newly learned material with other parts of the course and with kindred courses. This organization of your thinking is an important step in the study process; it serves as an aid to the comprehension, unification, and fixation of ideas and facts. In this step the materials studied are made an integral part of your store of knowledge.

Now repeat steps A-R-M-O (Ask questions, Read, Memory devices, and Organize) for each succeeding topic in your assignment. Study this way until the entire lesson is completed; then you are ready for the last step in the S-ARMOR method of studying.

REVIEW. Now, in order to get an over-all view of the complete assignment, review the lesson as a whole unit. Look back over your outline, notes, and underlining. This review should be made the same night as the study. Later reviews are valuable because of the forgetting which takes place when material is not frequently recalled.

It has been found that more is forgotten in one day when retention is unaided by recall through reviews or other means than is forgotten in two months when retention is aided by recall. Reviews should be planned with the specific purpose of establishing retention of learning. Review materials as the last step in the study process, and then arrange to recall the important points at later intervals. The learning and retention which result from these reviews might well be termed "mental digestion" because of the complete assimilation of the materials learned. Short reviews over an extended period of time are more effective than the same amount of time spent in one or two periods. This problem of distributing learning periods is one which the student must understand if he is to employ effective study techniques. The following suggestions will hold true in most cases:

(1) If the learning task is relatively short and easy, the first learning may be most economically achieved by massed effort rather than by distributed effort.

(2) If the learning task is long or difficult, as is the case in courses at The Armored School, distributed effort will save time and energy. In a course distributed over several months, say three hours per week, there will be greater mental digestion and maturation than when the same course is presented in a compact block. The learning in this case will be more functional when the opportunity for mental digestion is presented, and the student will be better prepared to use the learning in real life.

(3) In the early steps of the establishment of learning, frequent—perhaps daily—practices are desirable. The intervals between practices may be gradually lengthened until further review is unnecessary.

(4) It is usually held that relatively short practice periods result in the best returns for a given expenditure of time. The length of the period depends upon such things as the background of the learner, the nature of the learning activity, and the degree of the habituation desired.

Here is a selection on the subject, "How To Study," which you should know. Let us apply the S-ARMOR method of studying to this selection.

EXAMPLE

S-ARMOR Technique

S *urvey:* Glance at the headings. You will see that the selection deals with *How To Study* and that problems of study are discussed. At a glance you will see that some solutions to these problems are suggested.

A *sk Questions:* Now let us start on the first topic. The mental question might well be, "What are the problems related to *How to Study?*"

R *ead:* Read the first topic to find the answer to your question.

M *emory Devices:* Underline, use marginal notes, and outline. Use these devices as you study this selection.

O *rganize:* Look up from your study and try to answer the question, "What are the problems related to *How To Study?*" If you can answer correctly, repeat steps ARMO in studying the next topic.

R *eview:* When you have finished all topics look back over your underlining, notes, and outline. Consolidate the materials learned.

Selection

HOW TO STUDY

Problems. Every type of studying is different and presents its own problems. It may seem futile to attempt to give general advice on how to study when there are so many divergent factors involved. There are, however, elements which are common to all study. These elements are (1) the control of attention in securing the most favorable attitude of work, (2) common principles of assimilation and retention of material, (3) proficiency in reading. Problems involved in all these elements would be: what are the study processes, and how may these processes be facilitated?

Control of attention. One of the chief sources of waste in studying is the reluctance to begin the task. This inertia on the part of the student can be overcome through two general procedures. One is to grit one's teeth and go to it; that is, simply to force oneself to begin the task. The other is to put oneself into physical surroundings and into a frame of mind which are conducive to study. Here are some suggestions for directing your energies toward the most effective control of attention: (1) Put yourself into a proper physical and bodily attitude for work. Sit at your desk. Do not start your study period by reading the newspaper. Have a set place to study. A set time is also good. (2) In so far as possible, work in surroundings in which there are absolutely no distractions. Studying with the radio going is wasteful. Any other distraction reduces efficiency. (3) Begin work. There's nothing better for overcoming inertia than to start through the motions of study.

Common elements in the assimilation and retention of material

(1) Take the problem-solving attitude. Know what you want to find. Ask questions and then look for the answers.

(2) Read with a purpose. Understand what you want to assimilate and retain.

(3) Organize ideas with reference to larger ideas and principles. Associate your new material with what you already know.

(4) Recall at intervals the essential ideas you have read. Do this when you study, and at intervals of a day or so apart. This will stop the rapid decline in that forgetting curve.

(5) Use the ideas acquired as soon as possible. Talk to your associates about them, think them over, or discuss them in class.

(6) When committing material to memory, learn by wholes rather than by parts.

Improvement in reading ability. The average student reads too slowly; in fact, more slowly than he is capable of reading. Force yourself to read faster. Continuous effort and practice in this direction will materially increase the rate of reading. Speeding up the rate also

tends to stimulate greater concentration of attention upon the whole thought content. Stop frequently to recall the essential ideas read. Acquire the habit of looking for the essential ideas. Another valuable practice is to take tests at frequent intervals.

HOW TO PASS THE EXAMINATIONS

WHY EXAMINATIONS?

Contrary to the traditional student viewpoint, examinations are not "necessary evils" of our military educational system. The examination serves a useful purpose in any program of instruction and should be looked upon as a part of the learning process rather than an undesirable hurdle to be cleared. The evaluation program at The Armored School, for example, will do these things for the student:

(1) *Motivate and stimulate learning.* The examination forces you to review and organize your material —something you should do anyway but often wouldn't without this incentive. It is an established principle of learning that students learn more when they know that they are going to be held accountable for the material covered.

(2) *Provide practice in the application of things learned.* The examination often provides the only immediate application of the knowledge and skills acquired. Certainly the practice in thinking under the stress of the testing situation will increase your ability to apply the things learned in a real situation later. There is a high correlation between ability as shown by success on examinations and ability to apply knowledge and skill in the solution of real live problems. The examination provides a great deal of functional and educative practice.

(3) *Indicate student progress.* Passing an examination symbolizes mastery of a subject about as well as is possible in the instructional situation. Examinations reveal the student's strength and weakness; they often indicate what is expected of the student, and further indi-

cate the important points to be learned from a course. When properly used they are diagnostic; the student finds the subject materials in which he needs further study. Under no conditions should the examination be looked upon as a goal, the end of the course, or something to "get done with."

(4) *Enable objective grading of performance.* Your performance on the examination is one means of demonstrating your ability as a student. You would not want to be operated on by a surgeon who had never shown his ability by passing a rigorous "state board"; it is just as important to protect the standards in your profession. The good student wants to do well in his class and receive a grade which will proclaim this fact to others. No one will say that every man in your class should receive the same grade. The examination is the only fair means of evaluating your performance and assigning grades objectively.

HINTS ON HOW TO PREPARE FOR AN EXAMINATION

(1) *Review intelligently.* Learning is not something that happens instantly. It is a process of growth which includes initial learning, remembering, forgetting, and relearning. This relearning is commonly called reviewing and is a vital part of the retention of learning. The suggestions which have been given for study apply here.

(2) *Don't "cram."* Cramming has been defined as the act of hastily filling the mind with information for a temporary purpose. Crammed material is unconnected and misconnected, soon forgotten, rarely understood. This type of "boning" often fails to accomplish even the limited objective of passing the tests. The new type examinations require the application of knowledge to problem type situations rather than the rote memorization of details. Cramming on the part of the student is his admission that the examination, not learning, is his goal; he is trying to "get by," and is not too much concerned with his professional growth. This type of so-called study represents mental, emotional, and physical debauch and leaves the student in no condition to take an examination.

(3) *Study with a group.* This is a very effective way to prepare for an examination if the meeting is organized, the group is small, and the members are equally interested. But—beware of the "bull session."

(4) *Schedule your time.* Arrange your activities so that your preparation is completed some time before the examination. Review of the materials to be covered in the test the night before examination is good, but if it requires an all-night session you have put it off too long. Plan your review so that some time is left for rest. This enables your thoughts to mature, and you will approach the test refreshed mentally and physically and settled emotionally. When preparing for two or more examinations, keep your review periods separate.

HINTS ON HOW TO TAKE AN EXAMINATION

(1) *Proper mental attitude.* The examinations which you will take while at the School represent the instructors' best efforts in test construction. In many cases these test items have been tried out before and have been found to be valid. If, however, a so-called "bad question" appears in a test, do not indict the entire program; it will only affect your own performance. Some students let one or two poor questions upset them to the point where they expect all questions to be "curve balls." Remember that the examination is not a contest between the student and the instructor; your instructor has made every effort to write a good test; he has tried to make every question clear without giving away the answer. Accept the test as a challenge to your ability, and keep in mind that the instructor wants you to do well because that means he has done his job well.

(2) *Read the problem.* Make a preliminary survey of the entire test to see that you have all the pages, to determine the nature of the examination, and to set up your over-all approach; this procedure will save you time in the long run. In answering the questions be sure to read each question carefully; this does not necessarily mean slowly, but with attention, concentration, and understanding. Do not read something into the question; students often let their thinking go off on a tangent by allowing their past experiences to affect their interpretation of ideas in the test. *Students who know their subject miss more questions because of failure to read the problem than for any other cause.*

(3) *Work vigorously.* Your mental activity will be very much influenced by your physical activity or the lack of it. Listlessly waiting for an inspiration, daydreaming, or looking around the classroom will never bring the answer to a question. An aggressive and determined attitude toward the task at hand will stimulate your best thinking. Do not allow yourself to be distracted by things happening in the classroom which you think should not happen. Some students raise questions after the examination has started; if these are of general importance the instructor will call your attention to them. In most cases, however, your best judgment is better than any clarification of difficult points which can be given by the instructor after the examination has started. *Work hard when you work* is sound psychology when applied to examinations.

(4) *Watch your time.* The amount of time which you can spend on the examination will be announced by the instructor before you start; don't "fight the problem" by thinking that it is not adequate. Make up your mind to finish the test with a good mark. Make every effort to finish your paper in time to go back and reread your answers. This does not mean that you will hurry through the examination with speed as the primary consideration; in most cases haste makes waste. If a question is difficult or if you cannot seem to get the answer in the normal time, skip it and come back to it. Unless the test is to be corrected for guessing, do not leave

blanks; answer all questions. After all, there is very little difference between a good guess and judgment, especially if the guess proves to be correct. Check your progress as you take the test and you will find your proper rate; do not be one of those students who is surprised by the bell when he is half finished.

STUDY-HABIT INVENTORY

Directions: This is a self-test. Take the test and then score your responses. The key follows the test. Each disagreement with the key probably indicates a bad habit or an attitude to be corrected. Answer each of these questions by writing in one of the following numbers: (1) Never, (2) Seldom, (3) Sometimes, (4) Usually, or (5) Always.

_____ 1 Do you have trouble "getting down to work" at the beginning of a study period?
_____ 2. Do you have a set place where you study?
_____ 3 Do you study late into the night or even all night before important examinations?
_____ 4 Do you study with the radio going or with persons talking in the same room?
_____ 5 Do you daydream in class or when you should be studying?
_____ 6. When you find a new word while studying, do you look it up in the dictionary or other reference books?
_____ 7 Does your school work prevent you from engaging in social activities?
_____ 8 Do you take notes in class as fast as you can write?
_____ 9. After reading a topic do you think of its meaning and try to recall the ideas presented?
_____10 Do you read all your assignments at about the same rate?
_____11. When you make an outline of materials studied, do you phrase the main points in your own words?
_____12. Before you begin an assignment, do you look it over and plan an order of procedure for learning the material?
_____13 Do you feel that the objective of your study is primarily to pass the tests?
_____14. Do you mark important points in your textbook, advance sheet, or precis so that these points can receive special attention when you review?
_____15. Do you ask your associates questions about materials studied?
_____16 Do you have trouble covering all your assignments?
_____17. Do you follow a definite study-plan?
_____18. Do you schedule your time for study?
_____19. When a school solution is presented, do you try to understand the justifications for that solution without fighting the problem and closing your mind to its merits?
_____20 When you read an assignment do you usually read it from beginning to end without stopping?
_____21 Do you sometimes discover, after reading several pages, that you do not know what you have read?
_____22 Do you sometimes have difficulty in understanding your own notes and outlines?
_____23. Do you make frequent recall of the materials presented in a course just to fix them in your mind, even though there is no pressing need, such as an examination, at the time?
_____24. When you finish an assignment do you review it immediately?
_____25. Do you frequently rephrase topic headings as questions and then read to answer those questions?
_____26 Do you move your lips or mumble while studying hard passages?
_____27 When you read an assignment over do you consider that you have studied it?
_____28 Having a four-hour assignment, would you try to complete it in one study period rather than at several different times?
_____29. When you take an examination do you leave difficult questions and return to them later?
_____30 Do you feel that you have to spend too much time studying?

KEY

The questions whose numbers are followed by *periods* should be answered "Usually (4)" or "Always (5)," while those question numbers not followed by periods should be answered "Seldom (2)" or "Never (1)." Few students can honestly answer all these questions correctly; a good student should answer about 25 out of 30 correctly. If you miss over five questions more attention should be given you your study techniques.

Books make excellent Christmas Gifts

Consult the Book Section

NEWS NOTES

Armored Cavalry Reserve

The Department of the Army has announced (1) The Armored-Cavalry Section (Armd-Cav-Res) is established as a section of the Organized Reserve Corps of the Army of the United States; (2) All officers and enlisted men in the Armor Reserve and the Cavalry Reserve are transferred to the Armored-Cavalry Reserve; (3) The Armor and the Cavalry Reserve Sections of the Organized Reserve Corps of the Army of the United States are abolished.

Generals Cramer and Parker Discuss Place of Military Police in Guard

The importance of Military Police units in the National Guard and plans for further cooperation were discussed by Major General Kenneth F. Cramer, Chief of the National Guard Bureau and Major General Edwin P. Parker, Jr., Army Provost Marshal General at a meeting in Washington Wednesday, September 15, 1948. Also discussed was the seventh anniversary of the Corps of Military Police which was celebrated on the 26 of September, ten days after National Guard Day which all Guard units celebrated.

Generals Cramer and Parker, both onetime officers in the 78th Division, one in World War I, the other in World War II, discussed the National Guard program which includes MP platoons in each of the two armored divisions; MP companies in each of the 25 infantry divisions and 16 separate MP battalions.

General Parker, who served as a National Guard instructor in Virginia prior to the recent war is thoroughly familiar with the Guard program. He has already inspected a number of Guard MP units and expressed himself as highly pleased with the state of training and the caliber of the men and officers.

Reserves To Take Important Part In Organization of M-Day Force

The Organized Reserve was given an important role by the Army in plans announced for further organization of an M-Day mobile striking force.

Many Reserve officers are receiving mobilization assignments in Organized Reserve units in which they will be prepared to serve in the event of military emergency. Such units will be designated as elements of the proposed striking force.

In general, mobilization assignments will be given Reservists in units supporting combat divisions of the M-Day force. In other instances, assignments will be made to training units especially organized to train officers according to their military specialties. Where assignments of this nature are prohibited by geographical residence of the individual officer, assignments may be made to authorized governmental agencies necessary for National Defense, or to posts, camps and stations near their homes.

The plan will give the maximum possible number of Reservists definite assignments in keeping with their military and civilian qualifications and will enable rapid mobilization of striking force units should the need arise.

Responsibility for mobilization assignments of all Reserve officers on extended active duty and others whose assignments are controlled by the Department of the Army has been delegated to the Director of Personnel and Administration, Army General Staff. Commanding generals of area commands are engaged in giving mobilization assignments to members of the Officers Reserve Corps not on extended active duty or otherwise not under Department of the Army control. These include Reserve officers now holding enlisted grades or warrant officer appointments in the Regular Army.

Assignment vacancies exist in units of all branches of service, including Armored Cavalry, Coast Artillery, Field Artillery, Engineers, Medical Department, Signal Corps, Quartermaster Corps, Intelligence, and Ordnance.

Last of American Forces in Action Series on Sale

The last volume of the Army Historical Divisions American Forces in Action series, UTAH BEACH TO CHERBOURG, is now on sale.

UTAH BEACH TO CHERBOURG tells how the right wing of the Allied forces that landed in Normandy isolated, and finally captured, the great deep-water port of Cherbourg. The attack began with a parachute drop of more than 13,000 men on the night of June 6-7, 1944, followed by a three-division amphibious assault. These forces swept westward to cut off the Cotentin peninsula, and then attacked Cherbourg from the South. In the final assault on the city, they received the greatest amount of direct air support ever provided for American Infantry up to that time. The main units participating in this action were the 82nd and 101st Airborne Divisions and the 4th, 9th, 79th and 90th Infantry Divisions.

Author of this volume is Major Roland G. Ruppenthal, who was historian of the VII Corps, and came ashore at Utah Beach on D-Day. Major Ruppenthal received a Bronze Star for his service as a combat historian and is now a civilian employee of the Historical Division.

Veterans of any of the armed services who present documentation that they were wounded while participating in the Utah-Cherbourg operation, June 6 to July 1, 1944, may obtain a free copy of this volume from the Historical Division.

New Engines Made for Military Use

Heavy-duty air-cooled type is put out in six models by Continental Motors.

A new line of heavy-duty air-cooled engines for use in military vehicles was announced by C. J. Reese, president of the Continental Motors Corporation. The six models range from 125 to 1,040 horsepower.

As these power plants did not require radiators, water pumps and other cooling accessories, their lightness in weight and compactness were particularly adaptable for military vehicles where pay load and cargo space were important factors, according to Mr. Reese.

Another feature emphasized by him was the simplicity of design and interchangeability of parts which assured quick mass production and facilitated repairs and maintenance. He added that they would operate under extremes of temperature.

It was announced that there were only two basic cylinders of 4⅝- and 5¾-inch diameter and increased power was obtained by increasing the number of cylinders and by stepping up the compression ratio in the basic cylinder models.

National Guard Divisions Increase Fire Power, Mobility

Organizational changes which will increase materially the fire power and mobility of the National Guard's Infantry and Armored Divisions were announced by Major General Kenneth F. Cramer, Chief of the National Guard Bureau.

The change parallels reorganization of Regular Army Divisions which was announced two years ago.

They are based on revised Tables of Organization and Equipment which utilize the battle experience of World War II.

Major revisions are:

Each of the 25 infantry divisions in the National Guard will add a self-propelled Anti-aircraft Artillery (Automatic Weapons) Battalion and a Heavy Tank Battalions.

Each of the two National Guard armored divisions will add a self-propelled 155mm Howitzer Field Artillery Battalion and a self-propelled Anti-aircraft Artillery (Automatic Weapons) Battalion.

The 96th infantry regiments in Divisions and Regimental Combat Teams in the National Guard troop basis will heavily increase fire power by adding a heavy tank company and a heavy mortar company in place of an anti-tank company and a cannon company.

National Guard strength of the infantry divisions will be increased to approximately 14,000 officers and men; of the armored divisions to some 12,000. The old peace or reduction strengths were approximately 13,000 and 9,000, respectively, or 80 per cent of full combat strength.

Full strength of infantry divisions is expanded to about 19,000; of armored divisions to about 16,000. The old figures were approximately 16,000 and 11,000, respectively.

Other changes include the addition of various service troops to the divisional basis, including additional medical and mess personnel.

Reorganization, which started October 1 and is expected to be completed by the early part of the next calendar year, will become effective for all organizations of a given type in the National Guard, such as separate companies, battalions and regiments, until complete divisional reorganization is accomplished. Effective dates for the reorganization of the various types of National Guard organizations will be announced from time to time by the Chief, National Guard Bureau, as the new Tables of Organization and Equipment are printed and distributed to the field.

Reorganization will be carried out first by the infantry divisions, followed approximately a month later by the armored divisions. Revised T/O&E's will be applied thereafter to other National Guard units as soon as possible.

* * *

Key National Guard Ground Officers to Get Airborne Indoctrination

Indoctrination in the tactics of airborne operations was given key National Guard officers by the Tactical Air Command in cooperation with the Army Field Forces, in courses conducted during October at Eglin Air Force Base, Florida.

Approximately 50 National Guard officers of Army units of the Command and Staff level, preferably Division and Combat Team commanders and training officers, attended the special three-day Air Indoctrination Courses. The courses were given during October 10 to 13, 17 to 20 and 24 to 27 and included demonstrations in air-ground operations.

"Training in airborne operations will be emphasized increasingly, since the National Guard as a first phase M-Day force must be prepared for immediate air-ground operations," according to Maj. Gen. Kenneth F. Framer, Chief, National Guard Bureau.

During field training this summer an entire National Guard Division, the 34th of Iowa and Nebraska, was given a thorough grounding in air transportability by instructors from the Air Tactical Command in conjunction with the Army Field Forces.

* * *

Certificate of Commission Standardized for Entire Military Establishment

A standardized Certificate of Commission for all officers of the National Military Establishment has been authorized by Secretary of Defense James Forrestal.

The new form is being engraved and will be put into use within the next three months for all new commissions, promotions or other changes in grade or rank in the Army, Navy, Marine Corps, Air Force, their Reserve Components, and the Coast Guard. It will be issued alike for all ranks and grades from General to Second Lieutenant, from Admiral to Midshipman.

The standardized certificate, which will replace more than 40 forms of varying styles and sizes now used by the armed services, will be engraved on fine artificial parchment, 11 by 14 inches. Current forms range from genuine parchment, 16 by 20 inches, for Generals and Admirals, to an Army Interim Commission Certificate printed on bond paper, 3½ by 8 inches.

* * *

Four Mechanized Cavalry Squadrons Organized by National Guard

Four of the 15 Mechanized Cavalry Reconnaissance Squadrons in the National Guard troop basis have completed organization, Major General Kenneth F. Cramer, Chief, National Guard Bureau, announced recently.

Federal recognition of Troop E, Raymonville, completed organization of the 112th Mechanized Cavalry Reconnaissance Squadron, one of two allotted Texas. Previously organized were the 211th Mechanized Cavalry Reconnaissance Squadron of Massachusetts; the 107th Squadron of Ohio and the 115th Squadron of Wyoming.

* * *

New Source of Radio Crystals

Quartz, one of the most common of all solid minerals and essential in the manufacture of efficient radio apparatus, has been produced synthetically in high grade quality under sponsorship of the Signal Corps Engineering Laboratories at Fort Monmouth, N. J.

Other minerals with some qualities similar to quartz, but not as common, including tourmaline, nepheline and aluminum phosphate, also have been made successfully. Several commercial firms and colleges under research contracts to the Signal Corps have shared in the success of this program.

* * *

National Guard Staff Officers Get Special Training Program

National Guard staff officers will be able to advance their professional training at home with a minimum loss of time from their civilian pursuits through special staff training programs being developed by the Army, it was announced by Major General Kenneth F. Cramer, Chief of the National Guard Bureau.

"This program, which takes into account that National Guardsmen must carry through two jobs—civilian and military—is meant as a supplement to the Army school system, not as a substitute," General Cramer said.

"Whenever possible National Guard officers will continue to take advantage of the specialized and advanced professional training available to them through the widespread system of Army schools."

The Army Field Forces, which is responsible for supervising the training of Army units of the National Guard, already has developed a "home-training" command and staff course for Division staffs. The course is being sent to each division commander of the National Guard in sufficient quantity to conduct training of his staff. It is a modification of the regular courses given at the Army Command and General Staff College.

* * *

Immediate Commissions Offered Qualified Veterans

Qualified veterans of the Armed Forces who have completed two years of college can get immediate commissions as second lieutenants in the Officers' Reserve Corps under a plan recently announced by the Department of the Army. Successful applicants will be given two years active duty with the Army.

The program is part of an intensive Nation-wide campaign to rebuild the officer strength, particularly in the company grades. The expansion of the Army has created many openings in the officer grades.

The new plan provides one of the simplest and easiest means for qualified young men to attain commissioned status ever offered by the Army. Qualified applicants, of whatever previous rank in the Army, Marine Corps, Air Force, or Coast Guard, will be given commissions immediately, followed by a 12-week course in a branch service school to prepare them for their responsibilities as an officer.

The offer is open to men between the ages of 19 and 32, who have had at least one year's active service in any of the Armed Forces of the United States during the period December 7, 1941, and June 30, 1947. The educational requirements specify that the applicant must have completed two years at a nationally accredited college or university, and score at least 110 in the Army's General Classification Test.

Applicants must pass a physical examination and be approved by a board of officers. These boards are located throughout the United States, at Army posts and stations and at U. S. Army recruiting district headquarters.

This opportunity for commissioned status also is available to men now serving in the Army.

Because the policy of the Army is to encourage young men to complete their education, college students, or men scheduled to attend college at the time of expected entry on active duty, are not eligible.

Headquarters Operation In Armored Units

*by Major George C. Fairbanks**

THE amount of recorded material pertaining to the operation of an armored unit's headquarters in combat is limited. The material contained in this article is based on the actual rather than the theoretical operation of the armored division. Some thought should be given to it, lest we all forget what was learned in the last war. In many cases, the course of battle will be influenced by the way the headquarters is operated.

Prior to the United States' entry into World War II, it was common practice to establish the headquarters in the field in some locality which would allow complete operation without interruption from the enemy. This meant the establishment of communication with the combat elements from a position to the rear, where the commander with the aid of a map and a staff could direct his units on the basis of the reports submitted. This method of headquarters operation was a carry-over from past wars, where gains in many cases were measured in yards rather than miles. With the introduction of the modern armored unit, with its mobility, speed, and shock action, this concept had to be abandoned. The headquarters of the modern armored unit must be in close proximity to its combat elements at all times in order to effectively control and coordinate their efforts. In some cases, armored units attempted to make use of the older method of headquarters operation, and either lost control of the battle area or suffered disastrous results. The methods and procedures outlined in this article are a result of research and of discussion with various personnel who made up the armored units in World War II. It in no way represents one division or one unit's procedure, but is the best over-all operation. This article is based on what was commonly referred to as the "light armored division" of World War II, which in many respects is similar to the present organization. Undoubtedly, in the future, drastic changes will be necessary with the improvement of armored vehicles and the resultant changes in warfare.

Before proceeding further it is best to consider and clarify the term "unit command post." TM 20-205, *Dictionary of United States Army Terms,* defines "command post" as follows: "Station of a unit's headquarters, where the commander and staff work. In combat, a unit's headquarters is often divided into a forward echelon and a rear echelon; the forward echelon is called the command post." In armor it is felt that the headquarters should consist of three echelons; namely, the commander's echelon, the forward echelon (CP), and the rear echelon. Each of the echelons has a specific purpose in armor, and is applicable to the battalion, combat command, and division headquarters.

First, let us consider the commander's echelon. The purpose of the commander's echelon is to supervise the execution of the unit's operations, and render prompt decisions. The location of the commander's echelon, therefore, must be well forward with the combat elements, which in all cases will place this echelon forward of the unit command post. In many cases the location will be dictated by the place at which the main effort is being made. Locating the commander's echelon forward of the command post has two distinct advantages. First, the commander receives his reports direct from his subordinates; and in many cases he can observe their actions, from which he is able to render prompt decisions and initiate changes to plans. Secondly, the commander being well informed has an amazing effect on the combat elements from the psychological point of view.

It is necessary for the commander's echelon to make reports to the next higher headquarters. In many cases the report will be made by the commander direct by voice radio. When such reports are made direct, however, it is necessary for the command post to monitor and record them. It is essential that all such reports be monitored or retransmitted by the command post so that they can be made a matter of record, and to keep the chief of staff or executive officer informed of the situation. Within the division, C-W radio will seldom be resorted to for rendering reports or issuing changes to plans during combat if the commander's echelon is kept well forward.

The forward echelon, as the definition implies, is the command post (CP); and its primary function is to act as a communication center or clearinghouse for all information. At this location the chief of staff or executive officer will preside, directing the actions of the staff and keeping the commander informed of the over-all situation. The command post must remain in communication with higher and subordinate headquarters, and also with adjacent, supported, and supporting unit headquarters. A report or information from any credible source received at the command post must be transmitted to the commander's echelon if it relates to the immediate situation or requires immediate action.

The question always arises as to where to locate the unit's command post. Locations must be selected from the standpoint of communication, situation, and security. Regardless of the size of the command post, security is derived in the majority of cases from the combat elements. Therefore, it must be kept forward where this protection is available. The situation in some instances will dictate the location of the command post. In fast-moving actions, the command post must be capable of operation while on the move; in slower situ-

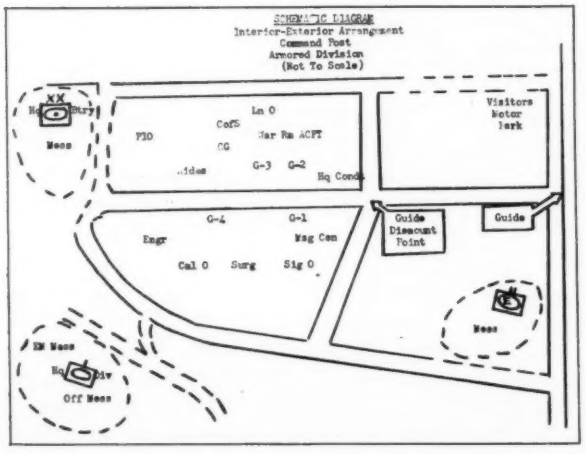
*The Armored School, Fort Knox, Kentucky.

TYPICAL COMPOSITION TABLE
ARMORED UNIT HEADQUARTERS ECHELONS

Commander's Echelon	*Commander's Echelon*	*Commander's Echelon*
Commanding officer	Commanding general	Commanding general
Staff officers designated by commanding officer.	Aide	Aide
Enlisted men to operate radios and vehicles	Staff officers designated by commanding general	Staff officers designated by commanding general
	Enlisted men to operate radios and vehicles	Enlisted men to operate radios and vehicles
Forward Echelon	*Forward Echelon*	*Forward Echelon*
Executive officer	Executive officer	Chief of Staff
S-2 (if not with commander's echelon)	S-2 and special teams	G-1
S-3 (if not with commander's echelon)	S-3 and air section	G-2 (and special teams)
S-1	Artillery liaison officer (4)	G-3 (and air section)
S-4	Engineer officer (5)	G-4
Commanding officer	Surgeon	G-5 (when provided by T/O or when attached)
Hq & Sv Co		
Battalion motor (3) officer	Headquarters commandant	Division surgeon section (-)
Battalion surgeon (1)	Headquarters company combat command (-)	Division engineer (-)
Battalion combat trains (2)	Detachment military police	Division chemical officer
Headquarters commandant (3)	Detachment div signal company	Division signal officer
		Public information officer
		Division headquarters company (-)
		Division signal company (-)
		Detachment military police
		Division artillery (6)
		Headquarters commandant
Rear Echelon	*Rear Echelon*	*Rear Echelon*
Elements with combat command or division trains	S-4	Headquarters and headquarters company division trains
	Chaplains	Adjutant General
	Supporting medical company	Finance officer
	Supporting ordnance company	Inspector general
	Unit transportation platoon (-)	Judge advocate general
	Engineer detachment, water point	Special service officer
		Chaplain section (7)
		Division surgeon section (-)
		Division ordnance officer (-) (8)
		Division quartermaster (9)
		Division administrative center (10)
		Division replacement company

ations the command post must be established temporarily and be able to displace rapidly. In the moving situation, coordination of the staff becomes more difficult; and in order to secure more effective staff action the command post should be established whenever possible. In the moving situation, a method of operating messengers within the command post column must be planned.

Communication largely will be the determining factor in selecting the command post location. In selecting temporary locations, consideration should be given to radio limitations. Valleys, depressions, and hill masses tend to limit communication. On the other hand, critical terrain features tend to expose the command post to enemy action. Common sense must be applied in selecting locations, bearing in mind that the function of the command post is that of a communication center for the unit. In many instances the commander's echelon closes with the command post at the end of the day's operations or when future operations are not in the immediate offing. Due to these considerations, no definite distance from the combat elements can be established for the location of the command post.



The rear echelon of the headquarters for armored units is located with the combat command or division trains. The function of the rear echelon is administrative. Referring again to TM 20-205, the definition of administration is "management and operation of all military matters not included in tactics and strategy." From this definition it can be seen that the rear echelon will consist of supply, maintenance, medical facilities and personnel sections not needed immediately by the combat elements. Each rear echelon will consist of elements of a number of various units, making it necessary to designate a commander at the combat command level to coordinate and direct movement. At the division level, the division trains commander performs this function. Security of the rear echelon is dependent upon the proximity of the combat units. At times it is necessary to give the rear echelon some combat elements to discourage ground and air attacks. In the table below, a suggested breakdown for each headquarters of the armored division is shown. This suggested breakdown may apply in one situation and not in another, and flexibility should be encouraged and changes made when necessary. The command post echelons as shown

for the battalion are based on the medium tank battalion, and interpretations must be made for the armored infantry battalion and supporting battalions.

NOTES:

(1) Battalion surgeon established aid station in close proximity to CP.
(2) Battalion combat trains are composed of medical, supply, and maintenance units to support the operations.
(3) Headquarters commandant not specifically authorized below division level appointed as additional duty.
(4) Artillery liaison officer provided by artillery headquarters.
(5) Engineer officer normally commanding officer of attached engineer company, or liaison party from engineer battalion.
(6) Division artillery headquarters and headquarters battery will be located as designated by division artillery commander.
(7) Chaplain sections normally are located with rear echelons, although they work forward.
(8) Division ordnance officer will be located with the headquarters company of the ordnance battalion.
(9) Division quartermaster will be located with the headquarters company of the quartermaster supply battalion.
(10) Division administrative center created on orders of commanding general only.

Division of the headquarters into echelons in no way solves the entire problem for the operation of the headquarters. To operate effectively, certain plans and a standing method of operation are advisable. Staff actions and procedures as applied to the tactical situation are the responsibility of the chief of staff or executive officer; however, the many details which tend to improve the operations of the command post must be specifically delegated to another officer. The appoint ment of the headquarters commandant should be given careful consideration by the commander and the chief of staff, due to the important duties he will perform. In discussing the duties of the headquarters commandant, only the division level will be considered, as subordinate headquarters can follow the procedures with modifications.

The establishment of the command post, its arrangement, and its security are all designated as duties of the headquarters commandant. Specifically, in armor the headquarters commandant must accomplish the following: local security of the command post, interior and exterior arrangement of staff sections, billeting and feeding all personnel to include liaison and visiting personnel, reconnaissance of new command post locations as designated by the commander or chief of staff, and the posting of competent guides at critical points approaching the command post. Taking the responsibilities in order, local security is maintained by the employment of all personnel of the headquarters. The headquarters commandant must devise a plan based on the situation and place it in effect immediately upon establishment of the command post. The chief of staff must be informed of the measures taken for local security as soon as the plan goes into effect. The cooperation of all staff section heads is expected in maintaining local security and in supplementing the defense platoon of the headquarters. At times, combat troops may be assigned or attached to division headquarters to strengthen local security. When such troops are assigned to the command post, the headquarters commandant is responsible for their integration in the overall plan of security. If the command post is kept well forward it will derive much of its security from the presence of the combat elements, and only on rare occasions will it be necessary to bolster the available security. Regardless of the situation, local security will always be maintained at the command post. Because the command post operates twenty-four hours a day, sound judgment must be exercised by the headquarters commandant in the amount of security needed for a particular situation. Rest for personnel must be considered, or a resultant lowering of operating efficiency becomes apparent. Plans must be made and disseminated to all command post personnel as to employment in case of air or ground attack; these plans must consider the moving command post as well as the established position. Command posts may be established in woods, fields, towns, and cities; and each will present its own particular problems. However, there are some standing procedures which should be considered in the arrangements. The message center should be located near the entrance to the command post so that messengers, who in the majority of cases will be mounted, need not enter the position of the staff sections. The division message center is of sufficient size for an intramessenger service to be established between staff sections. The commanding general and chief of staff should be located centrally with respect to the staff sections. The operations and intelligence sections are located in close proximity to each other: likewise, the personnel and logistics sections are near one another. A visitors' motor park must be established with a dismount point in close proximity to the headquarters commandant section, which is located close to the entrance of the command post. The visitors' motor park and dismount point must have an established means of communication to bring the vehicles to the dismount point when the visit is concluded. Those special staff sections which are found with the command post during combat operations should be located close to the general staff section with which they normally function.

At the division headquarters a war room will be maintained. On the war room maps, various staff sections will post information of value to the commander; and this information will cover the entire army front. Another use of the war room will be to hold such staff meetings and briefings as are necessary. The war room of subordi-

nate units within the division will be where the unit situation and operation maps are located.

Prior reconnaissance of the proposed location of the command post must be made so that continual effective operation is possible. The headquarters commandant, in making the reconnaissance of a proposed location, should take sufficient guides and members of staff sections with him to insure a minimum loss of time when the command post is established. While the reconnaissance of the new location is being made, oftentimes the command post will be en route. The final selection of any command post location will be made by the chief of staff, executive, or by the commander, with due consideration to communication facilities.

In order to facilitate movement from one location to another, it is best to establish a standing order of march for the command post. A suggested order of march for the forward echelon, armored division headquarters, is as follows:

> Security; Chief of staff section; G-2 section (-); G-3 section; Air section; Message center and signal officer; G-4 section (-); G-1 section (-); G-5 (when provided by T/O or when attached); Liaison officers; Engineer officer; Chemical corps section (-); Surgeon section (-); Balance of G-2 section; Public information section; Division signal company (-); Division headquarters company (-).

This standing order of march assists the headquarters commandant in establishing the command post in a new location and also facilitates rapid displacement. Feeding and billeting will always present problems to the command post. Plans and arrangements must be made by the headquarters commandant for feeding and billeting of liaison officers, visitors, and observers. It is not uncommon in armor to have liaison personnel attached and detached frequently as the task organization changes. Such changes should be considered commonplace, and measures should be taken to meet them. Improper feeding and billeting discourage liaison officers, visitors, and observers although they are an accepted and vital part of the headquarters.

Those of you who have spent half a night attempting to locate a unit's command post will appreciate the value of competent guides to such installations. The armored unit is no exception to the fact that a command post, to operate as prescribed, must have guides placed at critical points on the exterior, and a directory furnished at the dismount point as to the location of the staff sections. During hours of darkness, illuminated command post signs should be available but must be used in a manner that is consistent with security. Many hours of valuable time have been lost because of an incompetent guide system, time which could have been spent in planning and coordinating an operation. The headquarters commandant must be aware of the necessity of a guide system, and he should have inspections at periodic intervals to see that the guides are functioning properly.

There were many instances where operation orders were issued verbally to the assembled commanders or to their respective liaison officers. Prior to a particular operation the commanders of the combat units were generally assembled and given their instructions; however, after the operation was placed in effect it became increasingly difficult to assemble commanders for further instructions without loss of time. The liaison officer of the unit in many cases was carrying instructions to this commander which, if not properly presented, could affect the whole operation. Many commanders prior to entering combat operations failed to pay particular attention to the selection of liaison personnel, or to their training. As a result, liaison officers in many cases were saddled with many additional duties deviating from their primary duty. In selecting personnel to act as liaison officers, commanders must consider that good liaison officers will make it unnecessary to assemble subordinate commanders during combat to issue new instructions. The liaison officer of the armored units must possess qualifications which are, if possible, better than average. The duties of liaison personnel are set forth in FM 101-5 and will not be discussed here; their training should be continuous, along with the balance of the unit. In the present organization of the armored division, liaison officers are provided for in the G-3 section. This tends to departmentalize liaison officers. It is felt that liaison personnel belong to no particular staff section; to achieve their maximum use and effectiveness during combat operations they must be coordinated and supervised by the chief of staff. By placing the liaison functions under the chief of staff you can assure the conveyance of all tactical and administrative information to the subordinate unit.

As the type of armored unit is improved and as warfare changes, changes in the operation of command posts will be mandatory. The armored division, being a unit of combined arms, requires a superior operating headquarters to coordinate and control the effort effectively. Details, such as records, reports, and other staff procedures which go to make up the headquarters operations have not been discussed because they are reasonably standard in all cases. It is not the intention of the writer that this article be construed to present the only manner in which the various functions could be performed, but rather to project a method of operation in more detail than presently available. New methods of headquarters operation should be encouraged and tried; if effective they should be adopted. Only then will progress be made toward obtaining a unit that is second to none.

The Armored Cavalry Journal

BOOK SECTION

THE SUPREME COMMANDER'S STORY OF A GREAT CONFLICT

CRUSADE IN EUROPE, A Personal Account of World War II, by General of the Army Dwight D. Eisenhower. Doubleday & Company, Inc., 559 pps. $5.00.

A Review by
Harry C. Butcher, Captain, U.S.N.R.

As might be expected of an aide who greatly admired and respected his general, I shall immediately recommend that anyone who is interested in The Armored Cavalry Journal will want General Ike's book in his library. I suspect, too, that many ordinary civilians who were in uniform likewise will cherish its possession. The book is, I warn you, not so much a personal story as it is a military history—perhaps personalized-history would fit it better. You won't find it quick reading; I needed two weeks of reading, as opportunity permitted, to write this sketchy review. It is the kind of a history you can keep by your bed and take in easy doses.

"CRUSADE IN EUROPE" starts with a brief personal account of the then Major Eisenhower's activities and beliefs while he was still serving in the Philippines in 1939. (He believed that U. S. participation in the war was inevitable.) There he had had four years of service as senior military assistant to General MacArthur. The book ends in the postwar period when General Ike was confronted with the changing attitude of the Russians toward the Western world. (Ours was changing too.) In between, General Ike covers almost every conceivable controversial military and some political questions which confronted him and his men and women in uniform in the E.T.O.

In passing I would like to express the hope that someone in the Pacific theater, preferably General MacArthur himself, will present a book paralleling General Ike's so, if for no other purpose, those of us who served in the E.T.O. can get a similarly clarifying and consecutive story of what happened in the Pacific. There have been numerous books, many of them good, written at various levels of opportunity to know, on affairs in Europe, but we have yet to see a comprehensive story, unbiased by any particular service interest, on the Pacific part of the war.

Harry C. Butcher entered upon active duty as a Naval Reservist in early 1942, suspending a busy career in radio which included the establishment of the Washington Office of the Columbia Broadcasting System in 1929, the managership of WJSV, and an eight-year period as Vice President in Charge of CBS for the Nation's Capital. In mid-June of 1942 he was assigned as Naval Aide to General Eisenhower. Author of the book "My Three Years With Eisenhower," Mr. Butcher is now owner and operator of Radio Station KIST, Santa Barbara, California.

However, General Ike quite thoroughly recounts the military reasons for giving the European theater first priority as against the Pacific. This decision had been reached before the general was called to Washington, soon after the Pearl Harbor debacle, where he was to become Chief of the Operations Division under General Marshall. This division he describes as the Command Post of the Chief of Staff. General Ike devotes what is, to me, an entrancing chapter to this Command Post. In this you will find the story of the darkest hours of the war for the United States, yet in those black days and nights there was taking form in OPD the story of basic planning, the reasons behind decisions, and the decisions themselves, which were to give us eventual victory. General Ike and his OPD associates became advocates of the cross-channel invasion into France. He was supported by General Marshall, Admiral King and General Arnold, and, in due course, by the American government. The British, as persuasively and courageously represented by Prime Minister Churchill, in time also approved this plan, but the plan frequently was exposed to the doubts of Churchill, whose military thinking often appeared to be influenced by the major political considerations looking for postwar influence in Europe.

In the spring of 1942, General Marshall sent General Eisenhower to England to survey the general military situation. General Ike took with him General Mark Clark who was then Chief of Staff of the ground forces. On their return General Ike was asked to recommend an officer to command in the European theater. He recommended General Joseph McNarney because McNarney had served in blitzed London, knew the workings of the British service departments, and believed in the air force's ability eventually to make possible the ground invasion of France. General Ike presented to the Chief of Staff a proposed directive for the European commander and was told by General Marshall, "I certainly do want to read it. You may be the man who executes it. If that's the case when can you leave?" With his associates, particularly General Mark Clark, he was soon immersed in welding together the first of his Allied commands.

At no place in the book did I discover any deviation from the strong beliefs in Allied cooperation which he expressed and practiced during the war. The book is an invaluable military history and, in making a permanent record of his reasons behind decisions and, particularly, his arguments with his friend Churchill and others, he has not perceptibly altered for history his beliefs and views of events and persons as I heard him express them. This, I

is a good measure of the integrity of any man and ough no confirmation of this quality in him is needed, am gratified to see its proof in his finished work.

General Ike tells of various reasons for our temporary setback at the Kasserine. He doesn't blame, as some did, the lack of "blooding" of the men but more particularly the lack of experience of the officers. Even this he explains by showing that many of the officers had only dummy equipment for training because of our weakness in matériel flowing from our years of almost pacifism. He tells the reasons for going into Sicily and Italy. He devotes many pages to the earnest discussions which finally resulted in the firm decision to make the cross-channel attack into France.

His problems with General Patton, whom he loved but nevertheless competently analyzes, are likewise thoroughly recorded. The Supreme Commander also had problems with Field Marshal Montgomery but General Ike graciously lets the Earl of El Alamein explain, by "Monty's" own letter, his eccentricities:

"Dear Ike:

Now that we have all signed in Berlin I suppose we shall soon begin to run our own affairs. I would like, before this happens, to say what a privilege and an honor it has been to serve under you. I owe much to your wise guidance and kindly forbearance. I know my own faults very well and I do not suppose I am an easy subordinate; I like to go my own way.

But you have kept me on the rails in difficult and stormy times, and have taught me much.

For all this I am very grateful. And I thank you for all you have done for me.

Your very devoted friend,

MONTY."

General Ike assumes, for the benefit of historians, complete responsibility for the "Battle of the Bulge." He traces the reasons for the Ardennes breakout without apology but with conviction that the decisions of himself and General Bradley were correct in the circumstances.

In recent months, while the Berlin crisis has been at its height, many of us have heard the charge that the President, in deference to the Russians, personally directed General Ike's forces not to take Berlin. Actually, Churchill wanted it taken, but General Ike makes clear that the decision was his and was supported by his staff. The decision was made because bombed-out Berlin, by then, had but little military value and he was intent upon splitting and destroying the German forces quickly to conclude the war. He added strength to Montgomery's armies to the North of Germany to prevent Hitler's fanatical worshippers to retreat and hole up in Denmark or Norway. He likewise directed Patton, Devers and Patch to swing South to cut off a possible last-ditch stand of Hitler or his principal subordinates in the mountains around Berchtesgaden from where he suspected that, by radio orders to outlying Nazi forces to fight unto death, Hitler or his deputies might prolong the conflict in isolated strong points in the manner in which they kept fighting long after they were by-passed at St. Nazaire and Dunkirk. The war might be regarded as over, and certainly would be celebrated at home as finished, yet we still would be fighting to eliminate any such remaining pockets. General Ike had a horror of casualty lists continuing to appear in the home press after the war was thought to be over.

General Eisenhower recounts some of his conversations with President Truman at the time of the Potsdam Conference. He expressed his misgivings to the President about pressing the Russians into the war against the Japanese when it was obvious that the days of the Jap were numbered. His dealings with the Russian Marshal Zhukov were personal and friendly, but when disagreements developed between Motolov and the then Secretary of State Byrnes, there was a noticeable cooling of friendship. In fact, there developed almost instantly, on orders from Moscow, an open showing of animosity in the daily contacts of Russian officers and men in Berlin. Elsewhere in his book General Ike mentions that he had advocated the continuance of an Allied command for occupation of Germany with as rapid as possible transition from military to civilian control under the direction of the State Department, and he foresaw some of the problems which later arose because of the arbitrary partitioning of Germany, and particularly of Berlin.

Those Republicans and Democrats who sought General

Signal Corps

The Supreme Commander and his Naval Aide.

Ike as their respective presidential candidate probably would not have been so persistent had they realized that General Ike had made up his mind months before. (Including me!) While riding with President Truman at the Potsdam Conference, General Ike had said that he had no postwar ambition except to retire to a quiet home and there do what little he could to help our people understand some of the great changes the war had brought to the world. As General Ike puts it in his book, the President replied, "General, there is nothing that you may want that I won't try to help you get. That definitely and specifically includes the Presidency in 1948." To this astounding suggestion General Ike quotes himself as replying, "Mr. President, I don't know who will be your opponent for the Presidency but it will not be I." Then he adds "there was no doubt about my seriousness." The word "my" is in italics.

The book has excellent war maps which will particularly interest those who were in one or more of the campaigns. It is so completely annotated that there are twenty-nine pages of footnotes at the back.* He gives also in the ap-

(*Personally I'm an asterick lover and I like my footnotes at the bottom of the page, and I like my footnotes to tell me something more informative than mere reference to some buried document.)

(Continued on page 60)

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The Supreme Commander's Story

(Continued from page 59)

pendices, the Allied order of battle for the final offensive and a chart of the Allied air-ground team for the final offensive. The appendices also contain a description of the German ground forces. He gives a comprehensive glossary of the military code names of the major operations under his command.

There is a wealth of observation on the qualities that make an officer fail or succeed in command. These pointers, not preachments, should make the book a "must" to every young officer. And, as one who saw a wide variation of ability and attitude of officers, young and old, in dealing with news reporters, I especially commend General Eisenhower's comment on public relations. In the E.T.O., he was the most popular American general with the press and radio representatives. On this persistently perplexing relationship in wartime he makes, amongst others bearing on the subject, the following significant comment:

"Complete wartime co-ordination and perfect co-operation can never be achieved between the press and military authorities. For the commander secrecy is a defensive weapon; to the press it is anathema. The task is to develop a procedure that takes into account an understanding of both viewpoints.

"The press is primarily and properly concerned with providing information to the public at home. Civilian effort produces the fighting formations and the equipment necessary to achieve victory. Civilians are entitled to know everything about the war that need not remain secret through the overriding requirement of military security. Indeed, the commander in the field must never forget that it is his duty to co-operate with the heads of his government in the task of maintaining a civilian morale that will be equal to every purpose."

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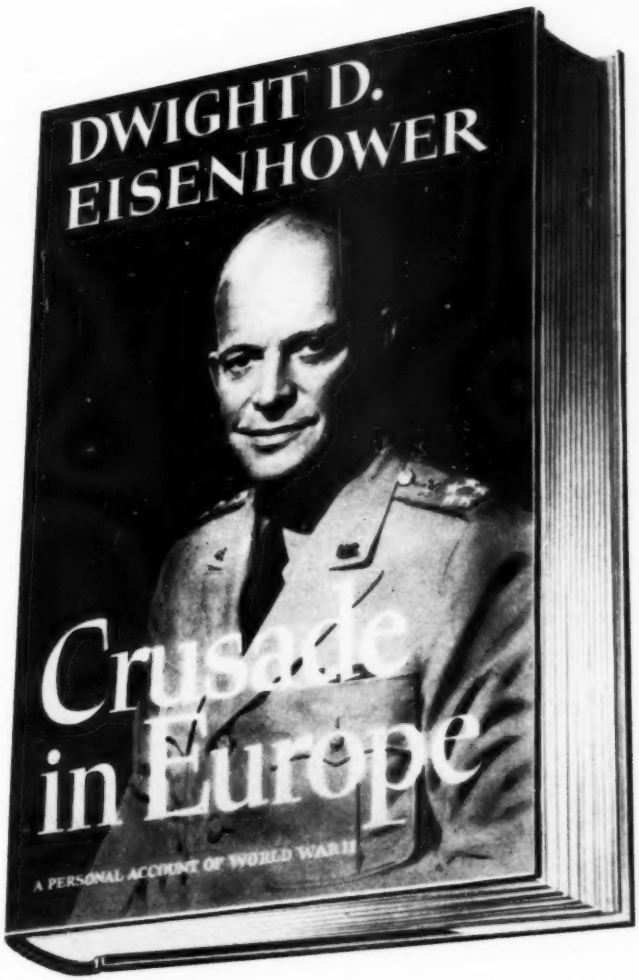

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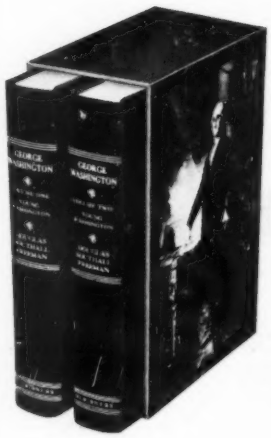

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